

# The United States MILLER

AND THE MILLING ENGINEER.

Sixteenth Year.—No. 2.

MILWAUKEE, FEBRUARY, 1891.

Subscription Price, \$1.00 Per Year.

G. M. MAHN.

P. P. MAHN.

MILWAUKEE BAG COMPANY,

—MANUFACTURERS OF—  
COTTON, PAPER AND JUTE

FLOUR SACKS

—DEALERS IN—

Grain Bags, Twines, Centals, etc.

TELEPHONE No. 427.

236 East Water Street, MILWAUKEE, WIS.

—ESTABLISHED 1846.—

J. B. A. KERN & SON,  
Merchant Millers

Capacity 2,000 Barrels Per Day.

MILWAUKEE, WIS.

Manufacturers of Choice Minnesota and Dakota Hard Wheat Flour.

RYE FLOUR

By most approved roller process, guaranteed the best and purest rye flour manufactured.

WE INVITE CORRESPONDENCE FROM CASH BUYERS.

"A PLEASURE TO OPERATE THEM"

THE RICHMOND

Grain Cleaning Machinery

AND DUSTERS.

## TESTIMONIAL.

LONGMONT FARMERS' MILLING & ELEVATOR CO.,  
Longmont, Colo., October 15th, 1890.

RICHMOND MFG. CO., Lockport, N. Y.:

Gentlemen—Thinking that perhaps you would like to hear how we are pleased with the two Bran Dusters recently purchased of you, we take pleasure in saying they are doing more than we hoped for of them, and in the six months we have used them have given us no trouble, whereas the machines which they replaced were a continual source of annoyance.

We now have in operation in our mill: two No. 4 Richmond Horizontal Brush Machines; one No. 4 Richmond Horizontal Scourer; one No. 4 and one No. 5 Richmond Horizontal Bran Duster.

Can say of these machines, it is a pleasure to operate them.

Very respectfully,

LONGMONT FARMERS' MILLING &amp; ELEVATOR CO.

SAM'L FRAZIER, Head Miller.

RICHMOND MANUFACTURING CO.

LOCKPORT, N. Y., U. S. A.



Are you in it?



We guarantee a saving of 25 to 50 per cent in the cost of lubrication where our

Compression Grease Cups  
and Badger Lubricants are used.

SPECIALTIES:

Fine Cylinder and Engine Oils,  
Extra Roller Mill Oil,  
Magnolia Babbitt Metal  
and Cotton Waste.

WADHAMS OIL &amp; GREASE CO.

MILWAUKEE, WIS. AND SEATTLE, WASH.

Correspondence Solicited.

GREAT  
POWER  
WITH  
LITTLE  
WATERJAMES LEFFEL  
WATER WHEELSBUILT BY  
THE JAMES LEFFEL & CO.  
Nearly 30 Years Business

affords every convenience for making Wheels of highest excellence and

Specially Adapted to All Situations.

Among the Wheels in operation may be found the Largest and Smallest Wheels in greatest variety of form, style and finish under the Highest and Lowest Heads in this country. Write, stating head, size of stream, kind of mill. We will send our fine pamphlet, and advise you.

THE JAMES LEFFEL &amp; CO.

SPRINGFIELD, OHIO. 110 LIBERTY STREET, NEW YORK CITY.

HUGHES STEAM PUMP CO.,

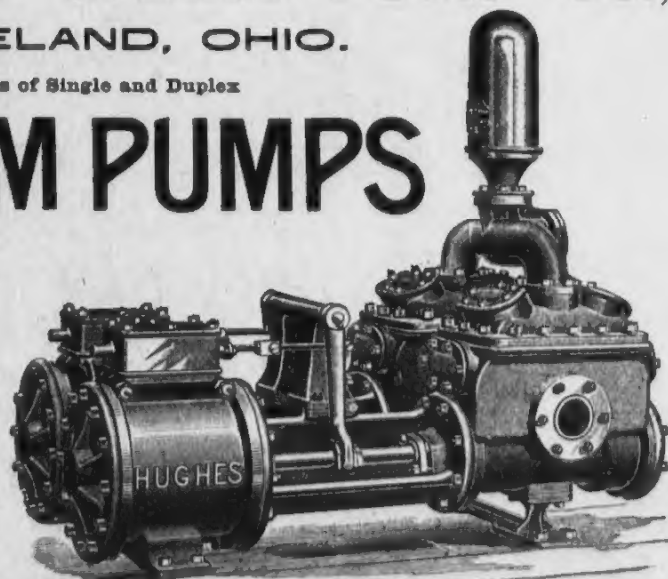
CLEVELAND, OHIO.

Builders of Single and Duplex

STEAM PUMPS

Of Every Description  
for all kinds of  
Work.

Satisfaction Guaranteed

Send for  
1890 Catalogue.

HUGHES IMPROVED DUPLEX FIRE PUMP.



THE  
"WESTERN"  
MILL SHELLER.

The most Compact, Durable, Best Sheller and Best Cleaner.

Takes up but little room, runs at low rate of speed, requires no attention. It is in every respect the

Best Sheller ever offered to the Public.

Please mention this paper. Write for full particulars to

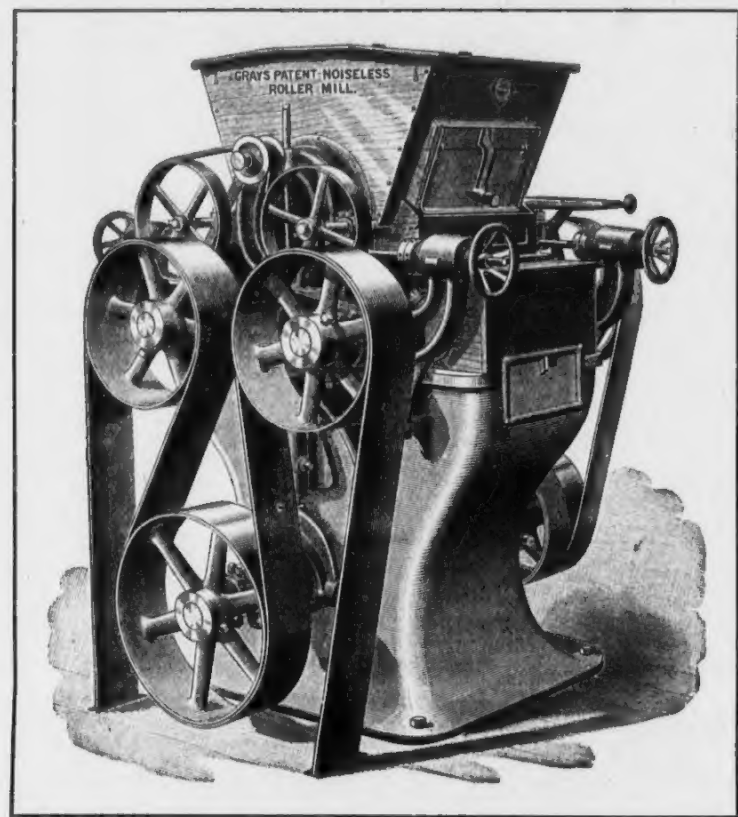
UNION IRON WORKS, - DECATUR, ILL.

Mfrs. of "Western" Shellers, Cleaners, Separators, and all kinds of Elevator Machinery.



# This is the Roller Mill

**That  
first  
revolutionized  
the system  
of  
milling,  
lined  
the  
millowner's  
pocket  
and  
lightened  
the  
labor  
of the  
operative  
miller.**



**Buy it and recommend it to your friends.**

— New 1891 Catalogue now in press. —

## THE EDW. P. ALLIS COMPANY

\* Mill Builders and Mill Furnishers, \*

**RELIANCE WORKS,**

**MILWAUKEE, WIS.**



# The United States MILLER

## AND THE MILLING ENGINEER.

Sixteenth Year.—No. 2.

MILWAUKEE, FEBRUARY, 1891.

Subscription Price, \$1.00 Per Year.

[Written for the UNITED STATES MILLER AND MILLING ENGINEER.]

### FALSE IDEAS OF ECONOMY IN THE EQUIPMENT OF A FLOURING MILL.

By J. F. MUELLER, M. E.

(Concluded.)

THERE is probably no part of a mill receiving so little attention as the power plant. The style and condition of the enclosure usually is suggestive of the condition of the combination of engine, boiler, pumps, etc., also perhaps of the man in charge. No engine, even if it is nothing more than a plain slide valve engine, should be put along side of a boiler without having a partition to keep out the dirt and dust arising from coal and ashes which usually surround the boiler furnace. It is not uncommon, with small power plants particularly, to find the same inclosed in a shabby gloomy little shed, anything but a comfortable place for an engineer. No engineer can be expected to keep up the appearance of this important part of the mill entrusted to him, where the surroundings are anything but pleasant. It is frequently the case that the building is extremely low, affording but little ventilation and during the warm summer days the engineer is more apt to fill up his furnace with all it can carry and then sojourning on the shady side of the house in the open air, perhaps until he perceives a slack-up of speed in engine caused by the steam running down. The competent engineer is likely to do this as well as the incompetent and he really cannot be blamed. In some of the mills in large cities the engine and boiler outfit is sometimes found in a dark pit where daylight is scarcely admitted and ventilation entirely out of the question.

There is nothing that so thoroughly exemplifies the old proverb of a stitch in time saving nine as the careful supervision of a boiler, and in following up this care by a thorough repairing of the little defects that make themselves apparent. Like a rent in the clothing, a small defect will grow very fast, and as it grows its power of increasing the deterioration will grow in faster ratio. But taken in time there is no reason why a boiler should not last for many years with but a small margin of its original strength taken away. Simply because a boiler is well made is no reason for utterly neglecting it. No engineer, worthy to be called such, will attempt to operate any boiler with any water without inspecting and cleansing. Boilers are likely to a deterioration of strength from a variety of causes, and the engineer in charge who has never had an explosion will insist on looking into and carefully inspecting this most dangerous adjunct of steam power.

In making the selection of an engine it is a wise plan to purchase one that will be best adapted to the engineer who is to take charge. While a Corliss

engine is beyond doubt the best and most economical type of engine that can be employed, it requires the attention of a man who is a thorough machinist and by no means a cheap or medium-priced man. There is no doubt that such a man is by far the cheapest in the end, and when in charge of a modern Corliss engine, is capable of saving his employer a good round sum from one year to the next. It is therefore more a matter of first cost. There are quite a number of automatic engines that can be employed with considerable economy, at least they are far ahead of the plain slide valve and can be bought for very little additional money.

In selecting an engine it is not only important to get a good make, but also to select one of proper size. Many persons entertain a mistaken idea that it is best to have a larger engine than is needed, "so that it will do its work easily." An engine which is too large for its work is very wasteful of fuel. Any engine will give the best result when it has a fair load, and in selecting from the list it is advisable that the lowest ratings be taken, as they are low enough for economical work.

In selecting a pump it should be of considerable more capacity than that needed to supply the boiler, as there are many things which effect the working of a pump; such as defective suction pipes, leaky valves, etc. It is the practice of most manufacturers to give the capacity of their pumps in gallons of water delivered per minute from which it is easy to select a suitable size, but the speed given in the tables at which the pump is to run is generally faster than that at which it is desirable to run them.

Some manufacturers of boilers are apt to overrate the capacity. By looking over various catalogues we are likely to find a marked difference in the estimated horse-power for equal size boilers. Some base the horse-power upon fifteen square feet of heating surface per H. P., while others make use of twelve square feet of heating surface per horse-power. The fifteen square feet, at all events, is the most reliable basis to figure on. The economy of the boiler should have an equal consideration with that of the engine, and should be ample in all its capacities, so as to enable it to absorb so much of the heat generated in the furnace that the excess passing up the chimney shall be the least possible with the necessities of draught; for unless all possible channels of waste are cared for or closed, we may go on and save at the "spigot" of fine spun expansion curves, and waste the savings many times at the "bung-hole" of the chimney.

Heat is lost up the chimney, lost in its transit from the boiler with the steam through pipes and cylinder. An immense loss of heat takes place in the exhaust, either to the atmosphere, or in

lesser degree in the condenser. There are various devices to take the maximum quantity of heat from the exhaust steam as soon as it leaves the cylinder. They are generally known as feed water heaters—seizing the escaping heat and marching it back to the boiler again. They are a positive economy inasmuch that they rest on the principle that if a quantity of heat far exceeding that necessary to actuate the piston must pass from the boiler through the engine, then they watch the exhaust and secure the superfluous heat, or as much of it as possible and remand it again to the boiler.

The mill-owner who uses the best means to protect and preserve his mill from fire is studying true economy, self-preservation. He is suspicious of fire from every source at which it might possibly originate. He uses preventatives many times when it is not necessary, not knowing where fire might originate; his only safety being in diligently guarding every avenue. Some would advise insuring your property well and if it gets afire let it burn. Insurance is good, no prudent business man will do without it, but he should be judicious in it. But more can be done than to insure the property. You should guard every avenue and use the prevention necessary to insure your protection. In the first place if you should insure for full valuation, no insurance company would pay full value. They would not be doing a safe business for themselves; certainly not a profitable one, as the temptation would be too strong many times for those who wish to close up and go out of business. It would certainly be the shortest way out. But few are willing to pay for even what make actual losses good. The miller who is successful must take a broad view of all his surroundings, he must not be short sighted, but remember that the neglect of any precautionary details is likely to prove disastrous and ruinous. Even if well insured, there is a loss, not only in the building and machinery, but the utter inability to supply customers' wants and keep their trade. Look well after it that your risks are reduced to the lowest possible minimum—it is self-preservation.

[Special Correspondence UNITED STATES MILLER AND MILLING ENGINEER.]

### A WORD FROM DONALDSON "ON THE ROAD."

THE writer by a mere accident fell in with your Baltimore correspondent "Oriole" and passed a very pleasant half hour with him. He is a red bird sure enough and some of the Baltimore mill agents think he is red hot. Recognizing my name on the card I gave him as one he had seen under several articles on "Milwaukee Review" we became fast friends and he gave me some valuable points on the flour trade here.

I have no doubt he will mention my visit in his February article, and will

no doubt fully discuss the Baltimore market. I have no idea what he will say, and I have no intention of writing up especially the Baltimore market. It is neither better nor worse than the Boston, New York, Philadelphia or Washington flour markets. I will give only a few facts that I have found in a thorough canvass of these markets, they are applicable to all. Like the writer, all dealers, with hardly an exception, have believed in better prices in January and were therefore easily induced to stock up early. Mills everywhere seem to have run for the sake of selling their bran at good figures and piled up the Patents. When the financial pinch came, these mills threw that great load upon the eastern markets, forced it on, and so glutted all these markets that every available store house was filled to the utmost, and still there was consigned cars on the tracks paying \$2.00 per day demurrage. So great was the pressure to sell, that thousands of barrels were sold at ruinously low prices and many a dealer is still kicking himself for having bought early at \$5.70, what he, on Jan'y 15th, could and did get for \$5.00. This was a general skirmish for orders. The small towns and small dealers were loaded up.

In short the eastern markets are well supplied with flour for some months. These conditions have changed somewhat since the 25th of January. The advance in wheat brought a little relief from the pressure, at the same time the Custom House reported a very substantial export movement in flour from the seaboard.

The mills that had been compelled to reduce their prices, quickly advanced to their old figures. This in turn checked all demand. Dealers have been so badly beaten in their calculations that they have no confidence now in this rise, especially as the pile of flour is so great on their hands. These gentlemen argue that this country is so large, and its resources so great and varied that no approximate idea can be got of the amount of wheat in the country, and besides, the bread supply is changing from wheat to corn, oats and barley. But we reply, corn, oats and barley are proportionately higher than wheat. Besides, how shall we overcome these facts that are admitted by all:

1st, That the reserves were never so nearly drawn up as in July and August 1890—there being hardly a bushel of decent milling wheat to be found at that time;

2d, The crop of 1890 is admitted by all authorities to be 100,000,000 bushels less than in 1889; and

3d, Our exports in the form of low grades and wheat together, will amount to very nearly as much as last year.

If they were scarce, poor and high last year, what may we reasonably expect if the above exhibit is correct?

I believe flour is good property.

DONALDSON.

Baltimore, Feb. 9th, '91.



"I CANNOT SAY TOO MUCH FOR THE SCALPER."

REFERRING, OF COURSE, TO

## The New Era Scalper

DOES NOT SCOUR THE BRAN.

Requires little power and occupies little space.



Will handle four breaks in any mill up to 100 bbls. capacity, or one break in 500 bbl. mill.

CANTON, O., January 24th, 1891.

SUPERLATIVE PURIFIER MFG. CO., Milwaukee, Wis.:

Gentlemen—Enclosed please find draft for . . . . . balance due on scalper. I cannot say too much for the scalper, and cannot see how it could be better for the work. My verdict is that it is about perfect—cannot be improved upon.

Thanking you for favors, I am, yours truly,

G. C. HARVEY

FOR CIRCULARS, PRICES, ETC., ADDRESS

**SUPERLATIVE PURIFIER MFG. CO.,**  
MILWAUKEE, WIS.

## VORTEX DUST COLLECTOR

WELL BUILT  
AND FINISHED.  
GUARANTEED  
TO DO  
FIRST-CLASS  
WORK, AND  
TRIAL ALLOWED.  
PRICES LOW.



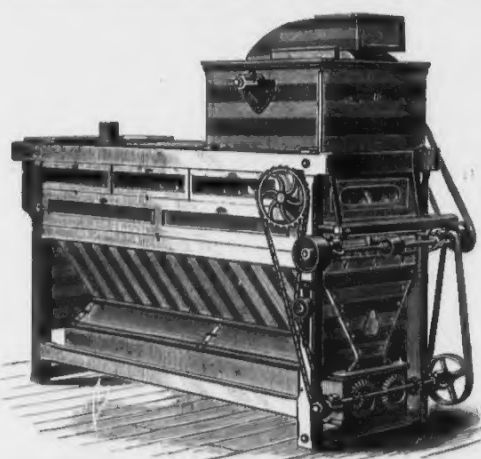
FULLY COVERED  
BY PATENTS.  
IT INFRINGES ON  
NO OTHER  
MACHINE, AND  
WE GUARANTEE  
EVERY USER  
AND PURCHASER  
AGAINST SUITS.

Thousands in use in all parts of the country on  
Purifiers, Grain Cleaners and other dust  
producing machines.

FOR CIRCULARS, PRICES, ETC., ADDRESS

**VORTEX DUST COLLECTOR CO.,**  
MILWAUKEE, WIS.

## The Superlative Purifier



A FIRST-CLASS MACHINE, AT LOW PRICES.

Guaranteed to do as good work as any Purifier on the market.

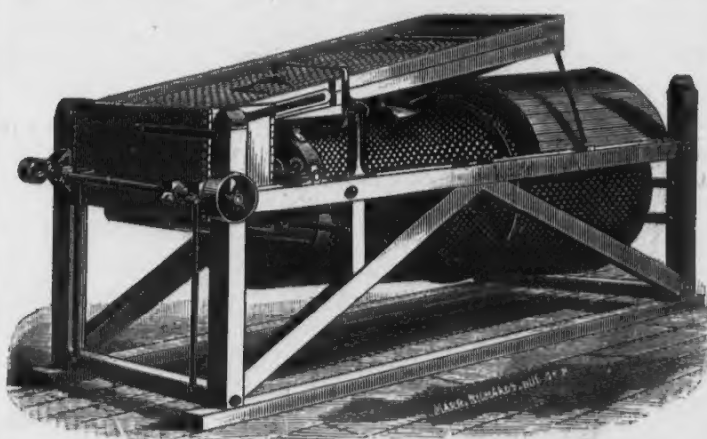
WELL BUILT AND FINISHED.

Thousands in Use. \* \* \* Trial Allowed.

FOR CATALOGUE, PRICES, ETC., ADDRESS

**SUPERLATIVE PURIFIER MFG. CO.,**  
MILWAUKEE, WIS.

## The Kurth Cockle Separator



Manufactured with either shaking or reel graders and with  
steel or zinc cylinders, as desired.

Also manufactured in connection with RICHARDSON'S DUSTLESS OAT SEPARATOR ATTACHMENT.

Owing to our having increased our facilities for the manufacture of the  
above machine, we are able to reduce the cost of manufacturing, and consequently the selling price also.

Millers in want of a Cockle Separator will find it to their advantage to get  
our prices before ordering.

FOR CATALOGUES, ETC., ADDRESS

**COCKLE SEPARATOR MFG. CO.,**  
MILWAUKEE, WIS.



# UNITED STATES MILLER AND THE MILLING ENGINEER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.  
To American subscribers, postage prepaid..... \$1.00  
To Canadian subscribers, postage prepaid..... 1.00  
Foreign subscriptions..... 50.

All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.

Bills for advertising will be sent monthly, unless otherwise agreed upon.

For estimates for advertising, address the UNITED STATES MILLER AND THE MILLING ENGINEER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE, FEBRUARY, 1891.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER AND THE MILLING ENGINEER. You will thereby oblige not only this paper, but the advertisers.

## MILWAUKEE AMUSEMENTS.

DAVIDSON OPERA HOUSE—Every evening, Saturday and Sunday Matinees.

ELIJAH THEATER—Every evening, Wednesday, Saturday and Sunday matinees.

ACADEMY OF MUSIC—Every evening and usual matinees.

STANDARD THEATER—Every evening and usual matinees.

PEOPLES THEATER—Every evening and usual matinees.

GERMAN STADT THEATER—Regular performances Wednesday, Friday and Sunday evenings.

LAYTON ART GALLERY—Free Tuesdays, Thursdays and Saturdays. Admission 25 cents on Wednesdays and Fridays.

PUBLIC MUSEUM—Open daily. Exposition building.

Visitors to Milwaukee in either summer or winter cannot fail to find amusements suited to their taste.

THE free coinage bill now before the House committee will doubtless be defeated.

THE United States ranks first in manufacture, our products having exceeded those of Great Britain last year by more than \$700,000,000.

A REPORT sent out from St. Johns, N. F., to the effect that a reciprocity treaty had been agreed upon by the United States and Newfoundland, is denied by the State Department.

THE end of the session of the present Congress is rapidly approaching, and many important measures will doubtless fail to secure a final hearing.

THE farmer element in the Illinois legislature is laboring to secure the passage of a bill which will abolish the the State Board of Warehouse and Grain Inspectors.

RECIPROCITY has been a subject which has attracted much attention of late and the recent treaties made and others in progress are very encouraging to our export interests.

IT is not very long ago that we chronicled a new "fad" of our British cousins for whole-meal bread. A company was organized called "The National Whole-meal Bread Company." After worrying along for awhile and finding that the taste of the public reverted back to bread made of ordinary wheat flour, the company has concluded to liquidate, and the necessary legal steps for that purpose are now being taken.

WE clip the following item from *The Financial Times* (London) which will be interesting to American readers in view of recent legislation:

The American girl can always be trusted to make the best of her opportunities, and in that respect the American Belle Mines seem to be well named. The circular just issued to the share-holders must bring immense satisfaction to them, but there is a sentence in the latest cablegram which has a moral for a

far wider circle. It is that "as market improves for our ores we are in shape to increase our output double or treble amount. That is a promising lookout for the free coinage men, and if many American mines are in the same happy position it will want more than universal bimetallism to save the United States from the impending deluge of silver.

WE have received a copy of *The Manufacturer and Inventor*, published by Messrs. Green, McAllan & Fielden, St. Andrew st., Holborn Circus, London E. C. It is an epitome of manufacturing and invention from a British point of view, is ably edited and well patronized and deserves a place in the files of American manufacturing institutions for reference. The subscription price is 10s. 6d. to subscribers in this country.

THE millers of the United States are to be congratulated upon the reciprocity treaty just concluded with that great South American republic, Brazil. It will open an extensive market for our breadstuffs and cereals. Section 1, which is of special interest to the flour and grain trade, reads as follows:

1. Schedule of articles to be admitted free into Brazil: Wheat, wheat flour, corn or maize, and the manufacture thereof, including cornmeal and starch; rye, rye flour, buckwheat, buckwheat flour, and barley; potatoes, beans and peas, hay and oats; pork, salt, and including pickled pork and bacon, except hams; fish, salted, dried or pickled; cottonseed oil; coal, anthracite and bituminous; rosin, tar, pitch and turpentine; agricultural tools, implements and machinery; mining and mechanical tools, implements and machinery, including stationary and portable engines, and all machinery for manufacturing and industrial purposes, except sewing machines; instruments and books for the arts and sciences; railway construction material and equipment.

Similar treaties are being made with other South American countries.

In this connection Mr. Leonard Busby, of Holt & Co., large flour exporters of New York city, gave the probable effect of the new treaty on the flour export trade as follows: "The Brazilian duty on flour is between 55 cents and 70 cents per barrel, according to Brazil exchange, which varies very much. The average duty is about 60 cents. Wheat is free, and is drawn from the Argentine Republic and ground in local mills, and has been gradually encroaching upon the United States' market in Brazil. It would eventually have driven us out of the Brazilian market altogether. There were two new process first-class merchant mills built in Rio by English capital about three years ago. They have a daily capacity of 3,000 bbls., or about 900,000 bbls. annually, which is enough to supply the consumption of Brazil. These mills, however, have been unable to keep running all the time on account of the inferior quality of the Brazilian wheat and also the Argentine wheat, which has rendered necessary the importation of 700,000 bbls. from the United States. The flour required is of the higher grades, and forms a decided contrast to our export trade with Europe, which takes low grades. Eventually the Rio mills would have secured better wheat and would have excluded us entirely. Free flour will save Brazil to this market."

## THE MILLERS' TRANSPORTATION BUREAU.

ALTHOUGH millers are proverbially conservative and careful in regard to their business enterprises, possibly owing to their early business training in their calling, and the necessity of dealing in that uncertain cereal from which their product is derived, still it would seem that the millers invited by the Executive Committee of the National Association to join in a movement for the organization of a Transportation Bureau, are conservative beyond reasonable limit, and are merely standing in their own light, by the reluctance which they show, to back up this movement with the small amount of money that is asked of them. There is no question but that there is a crying necessity for a reform in the methods of transact-

ing the flour carrying business. The railroads of the country are thoroughly organized. They make their agreements, and realizing the necessity for unity of action in all things, as a rule, they live up to the agreements entered into. Their uniform rules and methods of contracting for the carrying of flour are based entirely upon their own interests, and create a great deal of inconvenience and loss to the manufacturer and shipper. Individual appeals to the railroads for remedy have had absolutely no effect. They entertain the complaints and pleas entered, in a courteous manner, quietly "pigeon-hole" the matter, and nothing more is heard of it. Millers have repeatedly endeavored throughout the country to impress upon the minds of railroad managers the necessity of certain reforms in their methods and endeavored to secure some compromises as to rules which have been adopted, but all this has been without avail simply because millers are unorganized, as they should be, and therefore cannot meet organized opposition. For three years now a continued effort has been made, to persuade the Transportation lines, which contract for export flour shipments, to grant a reasonable business-like form of Bill of Lading. Fair promises are made at times, only to be broken, but in the majority of cases the matter does not receive even courteous consideration. The Executive Committee of the Millers' National Association realizing that in union alone is there strength, recently formulated a plan for the organization of a transportation association, which should deal with all these vexed problems, and through its powerful influence, remove the obstacles to obtaining justice and fair dealing on the part of the carriers. At first the plan was, to operate the bureau only in connection with export business, as that class of shipments have seemed to suffer the most, but the Executive Committee felt, as stated by the Secretary in his circular, that this organization should be made upon a broader basis, and that domestic and export shipments should both receive equal benefits. The members of the National Association were therefore invited to take stock in the proposed corporation. We have learned from inquiry that not more than half of the members of the Association gave any response whatever to the appeal of the Executive Committee, although they were furnished with a blank which required merely a scratch of the pen and their signature, to be enclosed in a stamped envelope addressed to the Secretary of the National Association. What possible reason can the silent half have for not giving a courteous, business response to a matter so decidedly in their own interest. It is possible that some thought, if they answered "no" to the inquiry, as to whether they would take stock, afterwards, when the Bureau became a success, they might be ashamed that they were put on record thus, and, on the other hand, if they said "yes", they might be called upon to pay \$25.00, and therefore they feared to commit themselves in any manner. To this class of "weak kneed" members, we would simply suggest that, instead of putting themselves on record in one of two classes, they have put themselves on record as members of the third class, whose action is far less commendable than that of the ones who refuse to back the enterprise. Of the proportion of members who responded to the appeal of the Executive Commit-

tee in a manly way, a large majority—about 150, refuse to contribute, most of them giving one of two reasons—either that they do no export business, pretending to be blind to the distinct statement that the proposed Association was as much for the benefit of domestic as foreign shippers, and the rest express themselves as not desiring to enter into the plan until its success is assured. If all millers adopted the latter idea there certainly would be no organization. The Executive Committee of the National Association have performed a great service in presenting this matter to the members. This Committee is composed of an active, energetic set of men, who have been constantly striving during the past year to make the Association of practical solid benefit. They have received absolutely no encouragement for their labors, and worse than that, it would seem as if the men who elected them to manage the organization, were not disposed to accept their suggestions, or co-operate with them to any extent. Should this proposed Transaction Bureau fail in organization, the fault will certainly not lie with the Executive Committee. They are deserving of much credit, and certainly deserve no censure because the members of the Association decline to support them. We do not, on the other hand, believe that the National Association is to be blamed in this matter. Probably a larger per-centage of the members of this Association would join in an enterprise of this kind, than would the same number of non-members. We believe that so long as millers in general are afraid to take any chances, or make any sacrifices, for the sake of perfecting a strong organization, so long as they decline to stand shoulder to shoulder for mutual benefit and protection, just so long will they suffer every injustice and imposition on the part of railroads and of other interests with which they come in contact. If they have not "sand" enough to support movements of this kind, for their own benefit and protection, they certainly deserve to suffer the penalty, and should not cry out at impositions, which they are called upon to endure. We are informed that a sufficient number of enterprising millers have now designated their willingness to subscribe to stock of the proposed organization to insure its formation. The benefits of this bureau are many. The proposed plan of following up and tracing all shipments for members, which pass points of transfer, and are there turned over from one road to another, owing to which the great majority of vexatious delays occur, flour being side-tracked, or left in a warehouse indefinitely, the function which such an organization would have in regulating rates, obtaining adequate rates and facilities, in regulating switching charges, adjusting claims, etc., is of inestimable value to shippers, and we predict that those millers who are shippers, and who do not join in the movement, will sincerely regret their timidity and lack of enterprise, at some future date. There is no question but that the bureau can be made self supporting after the first year, and that stock which is purchased in it can readily, within the next year or two, be sold at par, if not at a substantial advance. We hope that this scheme will not be abandoned and that there will be a sufficient number of nifty, enterprising millers found, to put it squarely upon its feet, and make it the success that it undoubtedly may be made.



## CORRESPONDENCE.

[The following letters are all from our own special correspondents, and reflect their views and the views of the trade in the location from which they write.]

## OUR LONDON LETTER.

The Weather—Food Bill—Cost of Wheat Growing in England—The Flour Syndicate—A New Centrifugal—Railway Matters—South American, Indian and Russian Notes, etc., etc.

**T**HE prolonged frost disappeared on Tuesday, the 20th of January, after having lasted almost without a break since the 25th of November last. There has not been such a long, cold spell in the vicinity of London since the severe winter of 1813-14. Although as soon as the frost was out of the ground, the heavy soils were too wet for plowing, the continuance of open weather has enabled farmers to go on the land to try and re-cover by horse and manual labor the tillage and seeding of the land. During the frost the moving of wheat, flour, etc., in bulk has not been easy nor has the work been necessary, as the London and country millers have, as a rule, been able to keep their hoppers full of wheat, purchased during the fine autumn at cheap rates, more especially of English samples. The prices paid for foreign wheats have been higher than is generally supposed, most lots of useful quality fetching 33s. to 38s. per qr. of 496 lbs. The average prices of wheat, barley and oats come out for the whole year, 1890, at 31s. 11d., 28s. 8d. and 18s. 7d. per quarter.

The British Food Bill for 1890 is the largest the country has been called on to pay, although on account of the low prices the increase in the amount of the bill is less in proportion than the increased quantities. Out of the forty-five products, such as are introduced by agriculturists in this country except maize and oil-seed cakes, twenty-seven came in greater quantity in 1890 than in 1889, and twenty-five show an increase on the quantities of 1888. The wheat and flour imports have been remarkably steady for the three years. The greatest quantity of wheat ever imported was 14,824,000 qrs. in 1882, and the maximum of flour was equal to 5,558,000 qrs. received in 1887. Barley and oats both reached their highest quantities in 1888. Maize is the only kind of grain which came more abundantly in 1890 than in any previous year. There is only one product in respect of which the British farmers have beaten their foreign competitors, after the latter had once obtained a good foothold in the market. In 1880 Great Britain imported 9,754,514 cwt. of potatoes, and nearly as much in the two preceding years; but since 1883 one-third of that quantity has not been received in any year, and now the quantity is only one-fifth. The competition in the potato market has been so sharp that some English and Scotch growers, far from good markets, have been driven out of it like the foreigners; but this is chiefly on account of the railway rates.

On the evening of Monday, January 21st, Professor Wrightson read a paper on "The Basis of the Cost of Wheat Growing" at the Surveyors' Institution. The professor showed the difficulty of estimating the cost of wheat by itself, and in his paper criticised the common valuations of work and manure. In his returns he allowed for the straw at consuming value, but not the value of the farmyard manure, only charging the cost of the carting and spreading to

the crop. Allowing £1. 7s. 6d. per acre for rent, rates and taxes, 7s. 6d. to 10s. for plowing, 12s. to 13s. for harvesting, and fair amounts for seed, threshing and other expenses, the professor gave a summary of the expenses and returns of a four-course rotation as follows:

CROPS.	EXPENSES.	RETURNS.
Roots.....	£7 4s 6d	£3 5s 0d
Barley.....	£4 7s 6d	£7 0s 0d
Clover.....	£3 11s 0d	£5 10s 0d
Wheat.....	£4 14s 7d	£7 10s 0d
	£18 15s 1½d	£25 5s 0d

Here a profit of £6. 8s. 10d. on the rotation is shown, or £1. 11s. 8d. per acre per annum. The returns are made up of 15 tons of swedes at 7s. consuming price; 4½ qrs. of barley at 28s., and straw valued at 14s. an acre for consumption on the farm; 1½ tons of hay at 60s.; and £1 for grazing; 4 qrs. of wheat at 34s., and straw 14s. The *Standard* in commenting on these figures states that as live stock commonly fail to pay as much as the roots they eat, it is obviously proper to credit the value of the manure they make, and to charge it to crops which get the benefit of it. By not charging anything for manure applied to wheat, the expenses of growing that cereal are made much smaller on paper than they are in reality.

Although the flour ring that was proposed some two years ago, embracing the mills in the northeast of England from the river Humber to the Tweed was never formed, it is not reported that the formation of a syndicate in the flour milling trade in the southern portion of the old district and some mills in Leeds and Wakefield is being effected. Negotiations with the firms concerned, about twenty in number, are not yet entirely completed, but rapid progress is said to have been made, and details will probably soon be made public. The headquarters are, it is understood, to be located in Wakefield where premises have been inspected as to their suitability. The process of valuation of proceeding, and the effect the syndicate will have on the Wakefield corn market is being much discussed in circles interested. It is further stated that the syndicate will have command over a capital of two million sterling. Why English millers should sell their mills to a syndicate just at the time they are making money is a mystery, and the only feasible reason that can be thought of is that a long price is being bid for the businesses. The state of the milling trade can be gauged somewhat from the fact that during the twelve months ending December 31st, 1890, there were twenty-one receiving orders in bankruptcy gazetted in England and Wales against millers, whereas during the year 1889 the number was thirty. The total number gazetted in the principal trades and occupations was 4,008 in 1890, and 4,570 in 1889.

At the present time much attention is being evoked by the appearance of a new centrifugal dressing machine which is being manufactured and placed on the market.

Parliament has a hard task before it in deciding upon the many complicated points involved in the railway rates scheme to be presented by the Board of Trade. As a compromise it could scarcely be expected to give complete satisfaction to either of the opposing parties; but there is a very general opinion to the effect that it leans heavily to the railway companies. Legislation was invoked in order to obtain a reduction of exorbitant rates and un-

equal charges found paralyzing so many branches of industry. The railway companies pursued the policy of asking a great deal more than they expected to get, in the hope of still getting all they need after being beaten down, and although preposterous demands have been reduced by the commissioners of the Board of Trade, who now point to their scheme as a compromise, if it should be made law as it is, agriculturalists and traders will have reason to regret that a railway act was passed.

According to Mr. William Goodwin, of Buenos Ayres, in Santa Fé and Entre Rios a crop of wheat probably equal to that of last year has been secured. In some other provinces damage has been done by frost; but the extent of the injury is not yet known. The yield of maize is uncertain on account of the damage done to it by locusts. Although the reports of damage to crops in the Argentine Republic by drought, rust and locusts, published a short time back, were exaggerated. The first official reports on the Indian wheat crop are now coming in, but they merely give estimates of area and some information as to the start in growth shortly after sowing. In the Punjab the area is reckoned at 6,363,300 acres or 22 per cent more than that of last year. In Bombay and the Central Provinces the acreage is expected to be about the same as that of the last crop, while in Berao there is a decrease.

According to a report of the Austro-Hungarian Consul at Moscow, the authorities are still engaged in elaborating the scheme for the projected Siberian railway. Of the routes proposed the northern one seems to have been decided upon. This line would run through Ufa, Statonst, Toursk, Krasnojarsk, Nishendinsk and Irkutsk. It is considered not improbable that at first the portion of the route as far as Toursk only would be a financial success, inasmuch as the surrounding country is very fertile and comparatively well-peopled and that the portion between the last named town and Baikal might pay, owing to the existence of gold mines in the Baikal, but that in the course of time, the region just named may become populous and eventually develop agricultural and mining industries of importance, the soil being favorable for both. The proposal to continue the line through the Transbaikai and the Amoor district is discouraged, owing to the sparse population of both countries as well as the severity of the climate, it being considered that the effect of working this line would be the burdening of the railway budget for many years to come.

L. MAYGROVE.

LONDON, Feb. 3, '91.

## OUR BALTIMORE LETTER.

The bright-hued bird in praise of the Monumental City—Its many and varied attractions and advantages.—One important business shows a retrograde movement.—The decline in flour milling interests.—A large milling plant necessary for the future greatness of the city.—Wants a big slice of the South American and other trades in flour—Shipping facilities, etc., etc.

**B**ALTIMORE has been a slow old town, it is true, a veritable laggard and tailer-on in the race for supremacy for years, but she is waking up and booming now from way-back and unless all signs fail is destined in the near future to become a leader among the progressive cities of the world.

This may sound funny to those outsiders who have always regarded us as too staid and conservative to keep up with the procession and also to the

cranks, pessimists and old-fogies in our own midst who are continually throwing impediments in the road to advancement and otherwise be-littling and discouraging every movement in the right direction, but notwithstanding all that, the fact remains incontrovertibly the same that the Monumental City is fast emerging from the woods and forcing its way to the front in importance.

And, come to think of it, why should this not be the case, endowed as we are with everything which is calculated to make a great metropolis.

Our city is noted for being the healthiest in the union, and, as far as climate goes, well, we manage to escape blizzards, cyclones and the like in winter, and also many of the discomforts incident to the summer season, which is more by far than most of our rivals can boast of.

We have our universities, colleges and seminaries, public and private libraries, galleries of art and conservatories of music; cardinal and bishops, churches and orphan asylums, hospitals and homes for the aged, secular and religious press, courts, jails and alms houses, railroad and steamship lines, grain elevators and commercial exchanges, importers and exporters, banks and trust companies, iron and steel furnaces and foundries, dry-dock and marine railway, ship and engine builders, potteries and glass works, cable and electric roads, locomotive and car shops, guano and canning factories, cotton-duck and flouring mills, breweries and distilleries, schools of mechanical training and design, machinists and millwrights, chemical and white-lead works, florists and nurseries, brickyards and quarries, twine, rope and bag factories, saw and planing mills, tobacco and shoe factories, hominy, corn-meal and rye-flour mills, type, bell and tool foundries, gas and electric light works, charcoal and lime kilns, box factories and cooper shops, shot tower and sugar refinery, gunpowder, river and water works, artisans, mechanics and laborers, city hall, custom house and new post-office, parks and public squares, monuments and imposing residences, theatres, club houses and cyclorama, hotels and cafes, masonic temple and natatorium, police force and fire department, harbor and ice boat to keep it open, resorts and suburban residences, and in a word almost every attraction, incentive and prerequisite to make us a power in the land.

With a population of nearly half a million, and with her industries rapidly increasing and developing in every direction, we are warranted in saying that Baltimore will soon be conspicuous also as a manufacturing center.

In addition to the advantages already enumerated, we should not forget those which come to us naturally through our geographical environment.

The Chesapeake Bay and its tributaries empty their treasures at our doors and are the inexhaustible sources from whence come our supplies of game, fish, oysters and crabs, and for which we are famous the world over.

The metropolis of the south is the home of the epicurean indeed, for no where else can such luxuries be found the year round at so small a cost.

Baltimore is also renowned for her beautiful women and cultured society—a reputation by the way which she proposes to maintain for all time to come. And then again—not only is Baltimore the most delightful city in the union in which to live, but it is also the least expensive; rents, food, clothing



and fuel are all relatively cheaper here than any where in the United States. Why this is so we are unable to say, but a short sojourn in our midst will demonstrate it conclusively.

And that is not all, for we take great pride in stating that the B. & O. R. R. Co. is tunneling our city at present and otherwise busily extending its connections; that the Western Maryland R. R. Co. is planning to secure better terminal facilities at this point; that the new sugar refinery is in operation at Curtis' Bay; that the mammoth steel works at Steelton are in full blast; that rapid transit is no longer a myth, as far as we are concerned, but an actual reality; that the sound of the hammer and the hum of the factory are heard everywhere; that hundreds, and we might say thousands of buildings including dwellings are in course of construction here; that the spirit of enterprise is fast taking possession of our people; that a wonderful improvement is apparent in the architectural beauty of our city; and that Baltimore is experiencing a tidal-wave of prosperity which promises to increase and multiply as the years go by.

But while this is all true, our object in writing this letter is to point out one interest which has not flourished here of late, but which on the contrary and for some unaccountable reason has lapsed into a state of innocuous desuetude, and that is our once noted milling industry.

In the light of our preliminary remarks, and in view of the facts in the case, this is one of the most remarkable and at the same time inexcusable catastrophes that could have possibly happened to us.

Baltimore, it will be remembered, at one time enjoyed great prestige as a milling center, but she has been superseded long since in that respect by Minneapolis, Milwaukee, St. Louis, Buffalo, New York and other cities.

The mill B. of the C. A. Gambrill Mfg. Co., and the Mt. Vernon mill of Wm. E. Woodyear & Co., are all that remain of the 15 or 18 mills, which were formerly located in and around Baltimore, and which relied entirely on this market as an outlet for their product. Of course we do not include in our calculations the Orange Grove and Ellicott City mills which are still owned and operated by the C. A. Gambrill Mfg. Co.

We find that every mill on Gwynn's Falls, ten in all, is either idle or else being utilized for purposes other than milling. The mill at Ilchester, and the Paragon mill at Baltimore, are also out of business.

The Silver Spring mill of this city was recently destroyed by fire and much to our regret, there seems to be no probability of its being rebuilt.

Here then we have some 13 mills altogether that have withdrawn from the field, one by one within a few years, and among their proprietors, from time to time we recall the following: Davis & Warfield, the Hoopers, the McClures, Seever & Anderson, Levering & McAtee, Jas. & Hugh Warden, Hazlehurst & Sons, Tyson & Bro., Robt. Tyson & Co., Frank Tyson, Walker & Dorsey, N. A. Gassaway, J. Olney Norris and others. Some of these are dead and some are living, but it is sufficient to know that none of them are engaged in milling at present. We know not how to account for the decadence in milling here unless it was due to the fact that our mills, which were built on the old buhr system, could not compete with those of

more modern design, and so, rather than attempt it, or go to the expense of remodeling, concluded to retire.

We have heard no theory advanced on the subject, but consider our inference near the truth, particularly when it is remembered that these mills did a large and flourishing business in their day and generation, and ceased only so to do when the new system of milling came into vogue.

The C. A. Gambrill Mfg. Co., is the only milling concern in these parts that has kept up with the procession.

Not only has it remodeled all its mills and made them complete in every respect, but it has also enormously increased its capacity and erected large elevators at Baltimore and Ellicott City.

This concern was the leader here when all our mills were in operation, and it is the same also to-day, and ever shall be, against all comers, world without end, amen.

Its position in this section is simply impregnable and deservedly so and we are glad of it.

The secret of its success and stronghold is that it is a live, active and enterprising corporation, thoroughly abreast with the times; that it deals in nothing but the best; spares no expense for improvements, and courts rather than shuns competition.

That is the size of our world-fame company, and if you can beat it we would like to hear from you.

But the Gambrill Mfg. Co. cannot do all the business of Baltimore neither does it aspire to.

Since those old buhr mills have dropped out of existence, others from a distance have stepped in and partially filled up the gap, but there is room here yet, and to spare, for more.

What we need above everything in Baltimore just now, is a strictly first-class modern roller mill with a capacity of about 5000 barrels.

Such an enterprise indeed is positively essential if we are to monopolize the South American flour trade of the future.

That trade of late has assumed enormous proportions and now that reciprocity is an assured fact, we may expect even a greater demand from that quarter.

We would be the last in the world to propose the erection of such a mill at this point if we thought for one moment that it would interfere or in the least conflict with the business of the Patapsco and Mt. Vernon mills of Baltimore or the Codoras, Paxton and Steelton mills of Pennsylvania, all of which are now engaged in this distinctive trade, but knowing as we do that they are already sold ahead most of the time, and consequently in no position to assume the greater responsibilities which are bound to come when the treaty goes into effect, we feel justified not only in making the suggestion, but also in urging its adoption.

South America is a great country, its possibilities are illimitable, and now that we can enter its borders free of duty, we, as Baltimoreans, should leave no stone unturned in our efforts to hold and increase its patronage on flour.

It is an acknowledged fact that flour made of wheat grown in this section, is peculiarly adapted to hot climates and hence commands the preference from tropical buyers.

The raw material, too, runs relatively lower here the year round than in any other market, which is another significant argument in favor of our project.

At present there are two regular lines

of steamers running from Baltimore to Brazil direct and also quite a number from New York which invariably stop in here on their outward bound voyages.

In addition to these there is a large fleet of Clippers in the business, owned by Baltimore parties. And now that the new sugar refinery is finished and in operation we are likely to have regular sailings also to the West Indies and Demarara, something we have not had for a long time, and which will enable us to get back a valuable trade we once enjoyed on low grades of flour.

With all these facts staring us in the face, can any one question that there is an opening here for a model mill?

Don't discourage the proposition on the ground that it will increase competition, for when we were at our zenith as a milling centre, both mills and jobbers made larger profits by far than they are making at present.

There is unquestionably ample room here for such an enterprise without interfering with anybody and while we would prefer home capital taking hold of the matter, we are inclined to believe that as usual it will remain for some sharp outsider to undertake.

We have lost 13 or more mills, and now ask for one only in place of them.

We cannot regain our former milling prestige without mills, that is one thing very certain, and as flour is going through here in large quantities right along for Europe it is fair to presume that something could be done in that direction too by a mill having the advantage of being located at a point so much nearer the consumer as Baltimore. At any rate it is worth a trial.

Such are the facts as viewed from an unselfish and disinterested standpoint and which we leave with you now to consider.

Before closing, however, we appeal for a mill in keeping with the growth of our city, in keeping with the metropolis of the South and in keeping with reciprocity—in a word, we appeal for a monumental mill and a Lord Baltimore brand!

Since writing the above, we find that Richmond is already beginning to crow over the prospect of regaining her former trade with Brazil, and that she is likewise making extensive preparations to do great things in that respect when the treaty goes into effect, which will be April 1st, but Richmond will never have a ghost of a show if Baltimoreans will rise up and do their duty promptly. It is stated by an authority that Baltimore and Richmond, particularly the former, furnish 70 per cent of all the flour consumed in Brazil, and that last year the American exports of the product to that country aggregated 1,000,000 barrels, which was a large gain over previous years, and that they bid fair to reach double that amount in a few years under the reciprocity act. Such is the position of affairs, and if it does not warrant a bonanza mill at Baltimore at once, then we are willfully blind to the situation and deserve to suffer the consequences.

\* \* \*  
ORIOLE.  
Baltimore, Feb. 14, 1891.

#### OUR BUFFALO LETTER.

**M**R. JAMES M. WHITNEY, of Rochester, is a great lover of animals. Next to the human race he loves the horse, and if it is of the Wilkes' blood, so much the better. His latest purchases were five beautiful fillies of this stock, and the famous Moore mastiff kennel, of Melrose,

Mass. He is also devoted to his poultry yards. Mr. Whitney pays Buffalo a visit occasionally during the absence of his partner, Mr. Gibson from this city, with whom he has been connected in the hard wheat trade for many years.

Elba, on the west shore road, will have a new flour and feed mill. Turner & Saulsbury are the proprietors.

Rochester millers are kicking again about the shortages in wheat shipments from Buffalo. As usual the blame is all put on the shoulders of the grain-dealers here, who I know are wholly innocent, but you cannot make the Rochester miller believe it. The order is given to the elevator for the number of bushels of wheat sold, and that is the last the dealer has to do with it. This order can easily be traced. If any one is to blame it is the railroad company. The roads weigh every car-load carefully and should be held responsible for its safe delivery, whether due to leaky cars or other cause.

Mr. N. C. Simons is enthusiastic in his praises of the new Mosely & Motley mill at Rochester, N. Y. Allis & Co. of Milwaukee furnished the machinery. It is conceded by every one on 'change that Mr. Simons knows a good thing when he sees it.

There was no little astonishment expressed after the vote at the last election of the Merchants' Exchange was counted. Not a grain man was in it. A ticket was sprung on the voters at the opening of the ballot-box, and so carefully was it worked that quite a heavy vote was cast before it was discovered. The discovery however made but little difference as the "outside element" were determined to try their hand at running the institution just once, without the aid of the grain men. The boys felt a little sore but blew themselves out in a day or two, just as they did over "Grain merchants'" letter.

Stephen F. Sherman arrived in Buffalo ten days ago, and immediately made his way to the court-house where his case had again been called. The judge sentenced him to five years at Auburn, but this did not ruffle Steve's always placid countenance, for it was understood that his counsel would at once appeal the case to the general term. His counsel, by the way, is a son of that old war-horse, N. C. Simons, possessing all of his sire's staying qualities, but a much larger proportion of fight. He says that it will be a long time before they get his client behind the bars. With half a show he would have cleared Steve's skirts of the charges against him at the first trial. Sherman is reported occupying a bookkeeper's chair in a large cement works in New York. He was employed in the same capacity when a poor boy by Clint. Newman, and if he shows half the business ability he did then, that cement works will change its firm name in less than six months. Brother Will, who is considered the real culprit, is a small iron-monger on one of the side streets of Toronto, and, it is reported has a large Bible class in one of the most popular churches there.

M. J. Ayers is about to build a feed mill at Canisteo.

The amount of flour in store here brought down by lake last fall is quite heavy, and a few agents claim the bulk of it will remain here until near the opening of navigation.

A suit will probably be brought against certain railroads here for delay in trans-shipment of flour. An eastern dealer bought 3,000 bbls. of flour last November of the Galaxy mill in Minneapolis. One thousand barrels were



shipped by lake, but all trace of the flour has been lost since then as far as the shipper knows. The buyer refuses to order the rest of his purchase shipped on until there is some settlement concerning the first lot.

Allen & Co.'s bucket shop failed last month. Allen made about half a million on the bear side of stocks, and when the market advanced he was caught for fully that amount. The firm had 90 correspondents and employed 20 operators, besides 8 clerks in the office here. The suckers were principally in Canada, although Rochester and other small towns lost heavily. Allen is running again, but not on so large a scale as before the break.

Mr. John Esser of the Banner Milling Company, has again been elected president of the Black Rock Business Men's Association.

The supply of Duluth wheat in store here is 785,000 bushels against 2,100,000 last year. Of this amount not over 150,000 will come on the market, and the bulk is held for millenium prices—about 120 or 125. The only millers having sufficient wheat on hand to last until the opening of navigation are George Urban jr. and Thornton & Chester. The last lot of 30,000 bushels No. 2 Chicago spring, left from two large cargoes, was taken by a local miller to help out his scant supply of Duluth. This wheat was offered at 95 cents a month ago, and gradually sold up to 104½. Just how the Buffalo millers are going to get out of this serious dilemma seems to bother the hard wheat dealers more than it does the millers themselves however. They may possibly have an eye on wheat in store in Chicago or other points, as was the case in 1889 when the famous 600,000-bushel sale was made to Schoellkopf & Matthews. In either case I think they will be compelled to lick salt from the hands of owners of wheat long before they can get fresh supplies from the North-west.

The receipts of wheat from Minneapolis by rail are light and millers do not take kindly to it on account of quality. A large proportion grades 2 Northern, and poor stuff it is too, while that grading No. 1 Northern is only fair as a rule. Besides it costs nearly as much as our choice Duluth Northern to lay it down here at present.

Messrs. Urban and James were in Chicago lately to attend the meeting of the executive committee of the Millers' National Association and while there made an attempt to get the Chicago quotations for the Exchange. If Mr. James' persuasive powers, backed by Mr. Urban's stalwart form and bright cheery-cherubic face, could make no impression on the hardened hearts of those Chicago governors the case is surely beyond all human skill. The trustees thought so at their last meeting and voted the unsuccessful gentlemen the thanks of the board, individually and collectively.

The ship canal committee held its final meeting in Pittsburg, February 3. The route recommended as the most feasible coming south takes in Jamestown, Sharpsville, Sharon, West Middlesex, Pulaski and strikes the Ohio river at Rochester, 30 miles west of Pittsburg. The cost is estimated at \$25,000,000. There are no great engineering difficulties to surmount and it is thought the work could be done in five years.

The Reist mill at Hamburg, Erie Co., took fire a few days ago and was damaged to the extent of \$6,000. It is thought a hot journal was the cause. Fully insured. H. D. Smith's mill at

Whitney's Point, near Binghamton were burned. Loss, \$5,000; partly insured.

Mr. F. J. Nichols, of Mt. Morris, has purchased the mill of F. Murphy at Portage for \$8,000 and other consideration. The mill will be put in modern style.

Mr. F. J. Henry made an extended eastern trip, returning Feb. 1. Judging from the manner he is hustling around in this bad weather the journey must have been unusually productive of good results both in a business way and in the direction of health, as he never looked more blooming than at present.

Mr. H. J. Harvey has the sympathy of his friends in the loss of his mother.

A. J. Wight has been in New York for the past month looking after his interests there. No business is being done through the firm's name, but manager Newell is taking a trade or two on his own account, and the boys are satisfied with the tips given of late through Farnum. A dissolution of the firm is advertised.

The work of building the docks for the Duluth Imperial Mill Co. will be commenced in a week or two.

No secretary of the Merchants' Exchange has been appointed yet, although it is necessary to attend to this matter before the board of trustees can really call itself organized. This has led to adjourned meetings for a month past. The trouble is in getting rid of one man out of the two proposed for assistant secretary. The "old guard"—Sandrock, Meadows and Gibson—are in favor of J. C. Miller, who has taken care of the books of the inspection department for years, while another crowd is urging J. C. W. Daly, secretary of the freight bureau. The old stand-by, Thurstone, who has rather a soft snap, will hold on to his office, I hear, and also his clerk. It seems foolish to pay about \$7,000 for services which could be procured for half that amount.

The only action of the trustees worthy of mention was the re-appointment of Mr. Conway W. Ball, chief inspector. This meets the approval of every receiver of grain on 'change. The board would look for years and not find his equal for honesty and ability. In filling this position Mr. Ball must contend with all kinds of people, and how he keeps his temper with the complaints from all sides is beyond comprehension. With all this not a kicker among the lot would ask for a change or desires it. Fault-finding is second nature in grain men; they cannot help it, and Mr. Ball has lived among them so long that he understands their nature better than they do themselves.

Litchard's mill at East Rushford is now owned by Reasoner of Lockport.

Rate-cutting by railroads is being agitated again. The matter would be one for the transportation committee to take up—but they won't, "don't cher know."

The car service association has refused to extend the time for unloading cars beyond 48 hours. Now, cannot the Merchants' Exchange force the railroads to load stuff from elevators with the same promptness they demand in unloading. But perhaps the exchange would not like to stir this matter any more than they do cutting rates.

According to some millers the flour market here is dull and it is just these few millers that reporters and correspondents for outside journals seem to strike in their travels. Now, the truth

of the matter is flour is not dull, neither is the trade lively, but there is enough doing to keep the miller's hands out of his pockets. A good city and a fair outside demand about hits the condition here. Prices are irregular, but there is no great anxiety to sell flour ahead, in fact orders are daily refused, millers generally having sold all the future they think safe. Patent spring was offered at \$5.35@5.50 and straight winter \$4.65@4.85 in car load lots. Millfeed continues strong at \$21.50@22.00 for coarse winter bran and \$21.00@21.50 for spring.

With the exception of a few days spent on repairs all the mills have been running for some weeks past.

The cooper shop idea has evidently dropped through. The gentlemen in whose hands the arrangements were, did not wish to spare the time to hunt up an available site for cooper shop although they were the very ones, with the exception of Mr. George Urban, to agitate the scheme.

As I said in my last, if Mr. Urban took the erection of that cooper shop under his charge the men would be at work making barrels now.

No. 1 hard Duluth sold at 116, No. 1 northern 114, No. 2 northern 100@111.

To buy or not, to buy will be an important question before the trustees of the Merchants Exchange in the near future. Only \$10,000 worth of stock is needed to get control of the board of trade building and some of our leading business men are urging the exchange to take hold now when the stock can be bought at only a fair premium.

Urban's calendar is out but I fail to see that it is really an improvement in an artistic sense from that of last year. There is no doubt regarding its cost being considerably above the last.

Mr. George H. Walcott has returned from a three weeks visit to Chicago and other western cities. Although defeated at the last election, as were all grain men on the regular tickets, his good nature would not allow him to shed tears as was the case with one or two others. In fact he was inclined to regard it as a great blessing inasmuch as it released him from unpleasant duties and as a rule unfavorable criticism.

Mr. Thomas Thornton of the firm of Thornton & Chester is in bed again from another stroke of paralysis, but is expected out in a few days.

A. J. Wright is sick in New York.

The Niagara Falls tunnel will be extended to Buffalo in time. A bill increasing the powers of the company has been introduced in the assembly. The capital stock of the company is fixed at \$10,000,000.

Mr. G. W. Derrick, manager of the Ovens Bakery in this city has been elected one of the directors of the Cracker Trust, at the meeting held this week in Richmond, Ind. Buffalo, February 14, 1891.

Buffalo, Feb. 14, 1891.

#### OUR ST. LOUIS LETTER.

Legislating for millers—Death of E. Goddard—Kansas Wheat—Inspection and grading matters—Legal matters—Wheat and flour markets, etc.

WITH the convening of the Missouri legislature many bills of more or less interest to the miller have been brought up, but they have been so thoroughly treated elsewhere that but a mention need be made of them here. A bill providing for the erection of elevators throughout the state, so that the farmer may have some place wherein to store his grain, is one of the principle bills and is meeting with no little endorsement from the granger element.

Hon. F. M. B. A. Fogle enters a bill for the licensing and regulating of public mills.

This bill goes on to tell how a mill should be operated and is replete with good ideas and valuable suggestions, which, of course, will be received with thanks by the whole milling community of Missouri.

Another bill is one changing the present weights of 48 lbs. and 24 lbs. for half and quarter barrels to 49 lbs. and 24½ lbs. This change, if adopted, will have a decidedly injurious effect on Missouri-Texas trade and Kansas-Missouri trade. In the latter case the Kansas miller must pack his flour for Missouri at 49 lbs. and 24½ lbs., where he packs it at 48 lbs. and 24 lbs. for Texas and Arkansas business, while Missouri millers will be obliged to place a 49 lbs. and 24½ lbs. packing in competition with Texas 48 lbs. and 24 lbs. St. Louis millers held a meeting recently to decide on what action to take in the matter, but came to the conclusion to let the F. M. B. A. element alone, since the bill, if passed, would ultimately effect them and their wheat market.

On Monday, Feb. 2, Elbridge Goddard, one of the oldest of St. Louis millers, breathed his last. Mr. Goddard was 72 years old and had been thirty-six years in the milling business in St. Louis. At a meeting of the St. Louis millers the following was unanimously approved:

"The millers of St. Louis deeply regret the death of their friend and brother miller, Elbridge Goddard, the oldest, both in years and milling experience, of the millers in this city, if not in the United States. He was a man of sterling integrity, of decided views, and not averse to expressing those views plainly and emphatically. An 'honest miller' in every sense of the phrase; foremost and unselfish in forwarding the interests of our industry; a good citizen; a charitable man, without publicity. His loss is not only our loss, but a loss of the Merchants' Exchange and to St. Louis, of which he has been a citizen since 1855. Our sympathies go out to his family and his friends."

And still the fight goes on about Kansas and her wheat grading or, to speak more correctly about O'Shea and his grading. It has been noticeable for some time that St. Louis' receipts of Kansas hard wheat has been growing (beautifully) less every day, while on the other hand Kansas No. 2 red wheat was coming in quantities far greater than usual and that this quantity was daily increasing. As Kansas reports show that large shipments of No. 2 hard are being made and but little of No. 2 red, the only way in which the matter can be explained is that Mr. O'Shea, chief inspector, and his inspecting corps have seen fit to look with favor on Kansas No. 2 hard and to grade it No. 2 red. Of course the difference in price and the dissatisfaction of the St. Louis buyers is not to be taken into account when the ability of Mr. O'Shea and his grain inspectors is questioned. That they have some excuse for their action must be admitted, as lately a mixture of No. 2 red and No. 2 hard wheat has been coming into St. Louis. This, O'Shea grades as No. 2 red. This manner of inspection has been going on for some time in spite of vigorous protests from the St. Louis millers. Last week matters came to a crisis and a big lot of wheat graded No. 2 red was refused by a prominent miller, although the elevator companies claimed it to have been graded No. 2 red. It is to be hoped that this course once taken will be continued, when a proper grading may be had. This question is also being agitated among the farmer element to show how, if the present grading is continued, Missouri wheat must depreciate in value. It is hoped by these means to get the wheat growers to influence their representatives in the legislature to take proper action in the matter.

In connection with this I might mention that a bill is at present before the legislature making the position of Chief Grain Inspector for Missouri an elective one. It is argued that in this way all favoritism will be done away with. If passed it will lengthen Mr. O'Shea's present term, and as the present Board of Commissioners are not for Mr. O'Shea, that gentleman hopes it will be passed.

The case in the U. S. Circuit Court of the Crown Mills Co. vs. Camp Spring Mills Co., has been decided in favor of the former. The case was one in which the Crown Mills Co. petitioned for an injunction restraining the Camp Mills Spring Co. from using a "Crown" label similar to that used by the Crown Mills Co.

The Enterprise Mills, of St. Jacob, Ill., have started up, the recent improvements having been finished.

The Exchange hall will be closed Saturday owing to the funeral of General Sherman.

#### WHEAT.

Wheat receipts for last week amounted to 183,300 bu., as against 162,600 bu. the week previous. There was but small demand either from the home or southern mills and but little trading was indulged in. On Saturday last, (Feb. 14,) No. 2 red was selling at 96¢@96½¢. It was quoted at 96½¢@96¾¢. To-day a



few cars were bought by city mills at above prices.

#### FLOUR.

Flour receipts for the past week amounted to 23,579 bbls., as against 21,587 the week before. Shipments for past two weeks were: 60,450 bbls. and 52,620. The out-put of the city mills amounted to 55,100 bbls. The market has much improved over that of the past few weeks, and a fair demand from the south and south-east, supplemented by a light inquiry from the east gave the St. Louis mills a nice business. But little export trading was done, and only about 20,000 sacks were shipped to British markets. Quotations on St. Louis flour are as follows: XXX \$2.90@3.00; family \$3.10@3.25; choice \$3.40 3.60; fancy \$3.95@4.10; extra fancy 4.35@4.45; patents \$4.65@4.80. WALTER HOWARD BAIN, St. Louis, Feb. 18, 1891.

#### MILWAUKEE REVIEW.

**T**HE Breadstuffs markets here remain quiet and steady. On Saturday, the 14th inst., wheat opened at 93 cents for May, sold at 92½ for May, and then up to 92½. Cables were rather better, but the receipts at primaries were larger, and the exports light. The weather continues favorable for farmers' deliveries, and there are no reports of damage to winter wheat. The markets tend to lower prices unless some change in the weather occurs.

Receivers report only a moderate demand from millers. The stock of wheat on hand, Feb. 14, was estimated at 563,079 bushels against 915,616 bushels the corresponding day last year.

The following table shows the closing prices of wheat and coarse grains, on 'change Feb. 14, as compared with 1890:

	Feb. 14, 1891.	Same day 1890.
No. 1 N wheat o t.....	98	80
No. 2 S wheat o t.....	93½	72
No. 2 S wheat i s.....	92½	69
No. 2 barley i s.....	66½	41½
No. 1 rye i s.....	80½	42½
No. 2 corn o t.....	50	27
No. 2 white oats o t.....	45½	22½

Flour is quiet and nominal, the demand being light and at low prices. Quotations: No. 2 Hard spring wheat patents, in bbls. \$4.75@5.00; Soft wheat do. \$4.50@4.75; Export patents, in sacks, \$4.00@4.25; Clears, choice, in barrels, \$3.75@4.00; Soft wheat, \$3.25@3.50; Straights, choice bakers' \$4.25@4.50; Export, \$3.50@3.75; Low grades, \$2.25@3.10; Winter straights, \$4.40@4.60; Rye flour, country, in sacks, \$3.25@3.75; city, in bbls., \$4.00@4.25.

Millstuffs are steady but dull and business is confined to the home trade. Quotations: Bran, sacked, on track, car lots, per ton, \$18.00@18.25; Fine middlings, sacked, \$18.00@18.25; Cornmeal in bulk, coarse, \$19.50@20.00; Ground feed, corn and oats, \$17.50@18.50.

The average daily production of flour in the city, for the week ending Feb. 14, was 6,950 barrels against 6,875 the previous week, and 4,600 in the corresponding time in 1890.

The receipts and shipments of flour and wheat during the last week, and for the correspondig week in 1890 were:

	RECEIPTS.		SHIPMENTS.	
	1891.	1890.	1891.	1890.
Flour, bbls...	46,220	44,648	124,782	72,148
Wheat, bush.	102,950	74,325	12,100	9,470

All the flour mills are running steadily, though not up to full capacity. All mill owners here are interested in the organization of a tracing agency, and, if it were placed in satisfactory hands, would doubtlessly contribute proportionately towards its maintenance.

The Superior Court has denied the motion to strike out the complaint of the Milwaukee Fire Insurance Company in the suit against The Sentinel Company, holding that the fact that the company was in a receiver's hands did not prohibit it from bringing suit in its own name. The counsel's arguments hinged

principally on the construction of the Revised Statutes, providing that a corporation shall continue to exist for three years after dissolution for the purpose of maintaining suits.

A SUIT for infringement of trade-mark has been commenced by the Duluth Imperial Mill Co. of Duluth, Minn., against Faist, Kraus & Co., of the Duluth Roller Mill, in this city.

THE Census bureau's bulletin on lake traffic, issued Feb. 16, puts Milwaukee's tonnage receipts for the season of 1889 at 1,584,254 and shipments at 351,554. This is sixth in the list of 107 ports on all the lakes. The source from which these statistics have been obtained are reports from the customs officers of receipts and shipments; from leading shippers at ports having no customs office and from the important transportation lines operating on the great lakes. Covering that portion of the traffic not included in port manifests the reports of boards of trade in the important cities have been made use of to check and correct the information thus obtained. Milwaukee shows up well in the shipment of mill products, her tonnage in this class being 289,184, or 32 per cent of the whole traffic in millstuffs on the lakes. Chicago follows with 25 per cent and Duluth is third with 11 per cent.

**N**EWs.—The millers and flour dealers of central Kansas have petitioned the interstate commission for lower freight rates to both the eastern and gulf seaboard. They claim that they are being discriminated against by the railroads, which favor eastern millers and those in the eastern part of their own State, by making a lower rate on wheat than on flour. They claim to have a hundred cars of flour ready to export if they can get a fair freight.

NEAR Metamora, O., Jan 25, Stevens' Roller Mills burned. Loss \$13,000.

THE J. B. Allfree Mfg. Co. succeeds The J. B. Allfree Co., of Indianapolis, Ind.

W. D. STRAW, miller at Sellersburgh Clark Co., Ind., drowned himself January 28.

SCHLAEFER, HUEBNER & CO., of Menominee Falls, Wis., will build a new flouring mill.

AT Ottawa, Ont., Jan. 29, Rochester's old mill was burned. Loss \$4,000; insurance partial.

AT Valley Mills, Tex., Jan. 24, Egloff Bros.' mill was burned. Loss \$30,000; insurance \$15,000.

THE Nicholas Krauss Grain Co., of Chilton, Wis., was incorporated Jan. 28. Capital stock \$100,000.

ARBUCKLE, RYAN & CO., of Defiance, O., have incorporated under the style of the Erie Milling Co.

AT Adrian, Mich., January 20, the flouring mill of Marsh Bros. was burned. Loss, \$12,000; insurance, \$7,000.

AT Buffalo, N. Y., Jan. 21, the flouring mills of Daniel C. Bastian were damaged \$3,000 by fire; insured.

YOUNG, McELROY & WHITE succeed Graff, Young & McElroy in the flour milling business at Utica, N. Y.

AT Adrian, Mich., Jan. 14, the flour mill of Marsh Bros. was burned. Loss \$10,000; the insurance aggregates \$7,500.

A LETTER from Ripon, Wis., dated Feb. 10, says: "Mills are all short of wheat and running light for that reason."

THE Staples new flouring mill at Stillwater, Minn., is in complete working order, and has a capacity of 150 barrels per day.

THE flour mill at Melrose, Minn., heretofore owned by Edwin Clark, is now operated by the Clark Milling Co., incorporated.

W. T. CONN & Co. have recently purchased the flour mills of E. D. Treanor at Milledgeville, Ga., and will improve and operate same.

AT Billerica, Mass., Jan. 18, the grain elevator and mill of C. A. Holt & Co. were burned. Loss about \$5,000; covered by insurance.

WM. PLEWES' flour mill, at London, Ont., which was burned Jan. 16, was insured for \$3,000 in Millers' Mutual and for \$3,000 in the Citizen's.

AT Watson, Ill., Jan. 31, the grist mill and stove factory owned by Henderson & Reynolds were burned. All the machinery was destroyed. Loss \$3,000.

AT Jacksonville, Ill., Jan. 21, the old Brook Mills caught fire, and the upper story, containing the machinery, was burned out. Loss \$1,500; insurance \$1,100.

AT Dannebrog, Neb., January 17, the elevator owned by G. B. Salter was burned. The town has no fire protection. The insurance is \$2,200, but does not cover the loss.

AT a recent meeting of citizens of Bancroft, Kossuth Co., Iowa, about \$1,800 was pledged in shares, to aid any party that might be induced to build and manage a grist mill at that place.

AT West Fairfield, Pa., Jan. 15, J. J. Kepple's flouring mill, together with a large stock of flour and grain were burned. It is thought the fire was the work of an incendiary. Total loss, \$40,000.

NEAR Sparta, Wis., Jan. 22, a grist mill owned by Manual Roberts, was burned. The property was under mortgage of \$3,000, and was to be sold at Sheriff's sale at LaCrosse the following day.

AT Hamburg, N. Y., Jan. 21, the Hamburg steam flour mills, owned by Long & Reist, were partially destroyed by fire. Loss, \$4,000 to \$6,000; insurance on building, \$10,000; no insurance on stock.

AT Baltimore, Md., Jan. 16, the feed and commission house of Snyder Bros. was damaged by fire. Insured for \$2,000 in Germania of New York on building, and for \$2,700 in Baltimore Fire on contents.

ACCORDING to official reports, the United States collects an amount equal to \$639 and spends \$461 each minute, night and day. The interest on the public debt amounted to a sum equal to \$96 a minute.

NEAR Camden, S. C., Feb. 1, the wheat and grist mill on Sanders Creek, belonging to James H. Vaughn was burned. Loss \$1,500. There was no insurance. The fire is supposed to have been the work of an incendiary.

THE work on the Niagara Falls milling tunnel, which has gone very slow till now, has taken a much more rapid pace. No. 1 shaft is down 95 feet, and No. 2, 75 feet, and a 55-foot shaft similar to these has been begun.

ZECH BROS., millers at Chilton, Wis., have consolidated with the mercantile firm of Knauf, Jackson & Berger, making a stock company with \$100,000 capital, and will erect a malt house with a capacity of 200,000 bushels.

AFTER three years experimenting, paper barrels are now being made by an English firm which compete successfully with those made of wood. Waste-paper, card-board and old sacks are the raw materials for their manufacture.

THE Alliance Elevator & Milling Co., of Sherburne, Minn., has filed articles of incorporation. The officers are C. E. Everett, president; H. H. McGovern, vice president; W. F. Brundage, secretary; and Peter Oleson, treasurer.

THE first flour mill in California is stated to have been erected in 1852. During the fall of that year flour was made and sold at \$40 a barrel. Wheat then cost 12 @ 13 cents per pound. Many millers long for a return of these good prices.

A FIRM of millers at Mooresville, Ind., recently bought 16,000 bu. of wheat in the State of Washington, for milling purposes, it being impossible to get wheat enough at that point to fill orders. It required a train of 27 cars to transport the grain.

IN New York city on the morning of January 14, E. M. Van Tassel & Co's grain elevator, corner Eleventh street and Third avenue, was burned. Loss estimated at \$150,000; insurance, \$70,000. The fire is attributed to spontaneous combustion.

AT Mazeppa, Minn., January 22, the oatmeal mill and elevator belonging to E. M. Johnson of Minneapolis were burned. Loss on buildings, \$60,000. About 50,000 bushels of grain belonging to the H. J. O'Neil Grain Co. of Winona was also destroyed.

IT may be interesting to the readers of the news items relating to the "Cracker War" to know that the capitals of the respective belligerents are: The American Biscuit Co., \$19,000,000; United States Biscuit Co., \$5,000,000; New York Biscuit Co., \$5,000,000.

N. F. BURNHAM, of the firm of Burnham Bros., York, Pa., died Jan. 22. He was the inventor of a turbine water-wheel known as the "New Improved Standard," which was the result of his experience of 35 years with that class of mechanical contrivances.

BRENNAN & COLGAN's cooperage shops at Brooklyn, N. Y., were damaged by fire on the morning of Feb. 4. The fire originated in the Hecla Iron Works situated on the opposite side of the street, and sparks therefrom set fire to the cooperage. Loss from \$25,000 to \$30,000.

ONE of the flour barges owned by the Staten Island Milling Co., of Mariner's Harbor, N. Y., sank at Pier 14, East River, Tuesday morning Feb. 10. She was loaded with 800 barrels of flour, destined for Pernambuco, by the Clyde

Line. The loss on the flour is about \$3,000; insurance unknown.

JANUARY 31, the Hydraulic flour mills at Connersville, Ind., was closed by the sheriff on an attachment suit by the First National Bank for \$11,900. The proprietors, B. P. Wood and E. K. Wetherald, have been in the milling business at Connersville for 20 years. The liabilities amount to about \$40,000; assets \$18,000.

W. P. INGLE, proprietor of the Beloit (Wis.) roller mill, lost a horse valued at \$300 by an unusual accident, on the night of Jan. 23. The horse broke out of a box stall and roamed about the stable; the floor over a deep well gave way, letting the animal into the hole, hind quarters first. It was found dead next morning.

AT Waseca, Minn., Feb. 1, the Waseca roller mill, owned by Everett Aughenbaugh & Co., burned. There was no one in the mill when the fire originated, and it was not until the watchman returned from dinner, about 1 p. m., that the flames were discovered. The building was totally destroyed, involving a loss of \$30,000, about half insured. Stock destroyed was valued at \$20,000, fully insured.

LUTE R. SMITH, second miller in a flouring mill at Columbus, Wis., narrowly escaped a horrible death recently. He was engaged in oiling some machinery when his jacket caught in a large gearing. Smith braced his feet and catching hold of a post, hung on for dear life. Gradually the jacket was drawn into the gearing and the head of the wearer was only a few inches from the champing wheels when the jacket gave way and the man was released.

AT St. Louis, Jan. 31, the American Biscuit Company filed a mortgage amounting to \$545,000, on all its property in the western States, making the Jenness Trust Co. of Chicago, trustees. The deed of trust is to secure the payment of the bonds issued to pay for the real estate on which the factories in St. Louis, Wichita, St. Joseph, Mo., Kansas City and Omaha are located. The agreement with the different parties from whom the pieces of real estate were purchased, provided that payment therefor should be made in bonds payable in 1901. The deed of trust covers nothing but that real estate, and has nothing whatever to do with the New York factory which has just been completed. Means to purchase and equip that factory was provided in another way.

#### THE RUSSIAN MILLERS' MEETING.

**A** MOST interesting report of the proceedings at a meeting of South Russian millers, held last September, was published by the *Novosti*. The attendance was light but the milling trade of South Russia was fairly represented. The proceedings had an official character, certain questions being formally submitted by the government, which is very anxious to promote the welfare of the milling trade. The first question was, "Are the conditions of South Russia favorable to the manufacture of flour for export?" while the second was thus worded: "Can South Russian flour compete with foreign flour in foreign markets?" To both of these queries an affirmative answer was returned. Thirdly it was asked, "To what countries is South Russia flour now exported, and what other markets might be won for it?" The reply was that at present South Russian flours, especially the finer grades, go to France, Egypt, Italy, Turkey and Great Britain. In the latter country, it was added, the middle grades find a ready market under the marks 1, 2, 3 and 4, the Russian middle grades bring of better quality than similar foreign grades. As future markets, Spain and Brazil, were indicated as worthy of attention. The fourth question, "Does the flour manufactured in South Russia meet the requirements of foreign consumers, and what means can be taken to make Russian millers acquainted with the demands of foreign countries?" brought forth the reply that care must be taken to deliver the grades of flour as equal in quality as possible, and under distinctive trade marks. With regard to the second part of the query, the congress thought it would be desirable to establish information bureaus to keep the milling trade



posted as to foreign markets. To the fifth question, "What wheats give the best flour, and is it not a fact that there is a dearth of such wheats as produce good flours" it was answered that "Ghirka" summer wheat and red winter wheat yield the best flour; but it was added that these wheats would not always produce a superior flour, as the quality of that article was entirely dependent on the harvest and the soil on which the grain was grown.

A paper on the state of milling in South Russia was read by Mr. Borinowic. He remarked that as Odessa is the emporium of South Russia, and as the flour export trade is no exception to this rule, the statistics carefully collected in Odessa may be taken as applicable to almost the whole of the South of Russia. With respect to the export of flour, the figures collected by the custom house of Odessa show that there were shipped thence in 1884, 1,513,070 pounds; in 1885, 2,957,515 pounds; in 1886, 2,122,811 pounds; in 1887, 2,013,688 pounds; in 1888, 1,853,600 pounds; and in 1889, 1,662,188 pounds (a pound is equal to 36 pounds.)

In the export of flour, Odessa holds the first place among Russian markets, for whereas the shipments from other Russian ports are far from reaching 1,000,000 pounds, Odessa ships from 1,500,000 to 2,000,000 pounds. In the period from 1885 to 1889 the total amount of flour exported from Russia was 3,705,000 pounds, the share of Odessa being 2,098,223 pounds. Taking the decennial period of 1870-1879, the flour shipments from Odessa were in the proportion of one-sixth of the grain shipments, but in the decennial period of 1880-1889 this proportion shrunk to one-eighth. So far as flour exports were concerned Odessa was a long way behind North America, where in 1884 the flour shipments were one-fourth of the grain shipments. In Hungary the proportion stood at 18 per cent; in Austria at 30 per cent. Koenigsberg and Dantzie ship nearly one-eighth of their total grain exports in the shape of flour, which for the most part is ground from Russian grain. A portion of the flour shipped from Odessa is brought from the country. During the last four years more than 850,000 pounds of wheat-flour, and about 110,000 pounds of rye-flour have been brought to Odessa by rail, of which the largest part, about 50 per cent, came from the district of Elisabethgrad, from the Birsula station. The manufacture of flour in Odessa has fallen off as the arrivals from the country have increased, which is easy to understand, as the country mills work under more favorable conditions. Only 381,000 pounds of flour were brought to Odessa by coasting vessels in 1889, whence it will be evident that the carriage of flour by the waterways is comparatively insignificant. The shipments of flour from Odessa in 1888 to Great Britain were 220,000 pounds; to Turkey 1,075,000 pounds; to Egypt 310,000 pounds; and to Italy 7,500 pounds. The market in Italy for Russian flour has contracted year by year. The shipments to Turkey diminished in a single year by one-half, but on the other hand the exports to England in three years have almost quadrupled.

The difficulty in the way of exporters lay in the heavy freightage, and above all in the high foreign tariffs on imported flour.

Then there were charges to be borne by flour shipped abroad. These consisted of—

(a) Brokerage charges.

(b) Costs of working from the rails on board the ship.

(c) The shortage which occurs in the rail transit from leakage due to the heedless manner in which the flour sacks are handled by the railway porters. A truckful of flour has usually a freight of 609 pounds. According to the regulations the shortage allowed on each car is 1 per cent. But that figure was a great deal too high, and as a rule the loss through accidental leakage of flour was much less. The legal shortage on each truck load is at present, in round numbers, a sack of flour of 6 pounds (216 lbs.) and to make up the weight which the law allows, a sack of flour is usually stolen out of the truck.

(d) A full truck of coals takes 609 pounds; by the time the coal reaches its destination another shortage, amounting to 19 to 20 pounds, has to be booked. This shortage makes coal dearer, and that in turn increases the cost of flour manufacture. Lastly,

(e) The manufacture of flour is rendered dearer by means of the duty levied on flour sacks imported into Russia. This duty surcharges each pound of flour by 1 to 2 copecks.

It was resolved to petition the Government to direct that the shippers shall receive from the custom-house an attestation respecting the number of sacks of flour sent by them abroad, and that this document shall afterwards serve to admit a similar number of sacks into Russia; further, that the export of flour and coals should be placed under more stringent regulations, so that the shipper be held responsible not only for the full weight of the trucks he has despatched, but also for the quality of the flour.

With a view to cheapening the railway carriage of flour, the directors of the South-Western line are requested to erect flour and grain warehouses at their stations, in the same way as has been done with good results by the Warsaw-Bromberg Railway. Flour could be stored in these warehouses, while the company might advance upon it to the amount of 50 per cent of its value. The charge for storing flour in these warehouses should be 6 roubles per truck for the first month, and 3 roubles for the next three months.

It was proposed that in the interests of the milling trade the following reforms should be asked of the Government:—

1. All foreign milling machinery and apparatus to be admitted duty free.

2. All sacks used to export flour, bran or other mill products from Russia to be freed on return from the import duty, whether of Russian make or not.

3. Foreign coals to be likewise free of duty, if destined for use in flour mills.

4. Credit in the case of millers to be reduced to a minimum.

5. With a view to training competent millers, technical training to be spread as widely as possible.

Among other petitions to be laid before the authorities was one in favor of permitting all foreign sacks to enter free of duty; one regarding the rebates allowed to flour exporters by the railway companies, which rebates should, it was urged, be 25 per cent, instead of 10 per cent; and a request for the establishment in all large ports of exporting offices, which should transact all business connected with the shipping of flour, and by doing away with brokers, free millers of the charges of those middlemen. Finally, a lowering of

the transport rates on coals was demanded.

The millers of Mariopol requested the congress to use its good offices with the Government to obtain a reduction of the carriage rates on wheat flour to the level of those on raw grain.

The following questions were also submitted to the meeting:—"Can South Russia show a sufficient number of competent millers, trained in the techniques of their craft?" "If not, what remedy can be found?"

The answer was explicit. It was reported that there were hardly any millers who could be considered as competent and instructed in the techniques of their art. The majority of persons following the miller's craft were said to be Germans, but they were declared to be destitute of any thorough technical training. The Congress came to the conclusion that the remedy would be found in the establishment of milling schools, in which instruction might be given not only in the techniques of milling but also in locksmith's and carpenter's work. After passing through the school, the pupil would have to enter a good mill to get a practical knowledge of his work, and only on the completion of this course would he be allowed to pass his milling examination. Pupils of other technical schools, however, would be eligible after undergoing a practical apprenticeship for the milling examination. It was recommended that every assistance in obtaining situations should be afforded to millers trained in this manner.

Towards the conclusion of the proceedings a member raised the question of the advisability of establishing Russian bakeries in foreign countries, with a view to introducing and spreading abroad the use of Russian flour. These bakeries would on the one hand accustom foreign nations to Russian bread, and on the other hand would serve as so many model bakeries, in which foreigners might learn to bake Russian bread, seeing that at present foreign bakers do not know how to prepare Russian loaves, with their agreeable flavor, from Russian flour. Against this it was urged that such a scheme would require a large outlay, as the competition of the foreign bakers would have to be taken into account at the outset. It was stated that a Russian baker had already endeavored to introduce Russian bread in London, but had succumbed to local competition. Such an enterprise could plainly only be carried out with success by the Government or by the Millers' Association.

During a discussion of the obstacles to the development of the flour trade, Mr. Bogomasoff, a member of the congress, called attention to the fact that in the Governments of Kieff and Podolia, the milling trade gave employment till 1884 to a large number of Jews. But in consequence of the well-known "May Law," which curtails the privileges of the Jews and debars them from settling outside the suburbs of large and small towns, and also deprives them of the right of acquiring or even leasing mills, the Jews had been compelled to renounce this branch of industry. Mr. Bogomasoff considered the number of empty water mills was one result of this measure. In districts where the milling trade used to provide hundreds of master millers with a livelihood, and to bring rent into the pockets of the landed proprietors, the streams now ran to waste past mills which had fallen or were fast tumbling into ruin.

## TRADE NOTES.

**BRANCHING OUT.**—The Wadhams Oil and Grease Co. of Milwaukee, Wis., whose advertisement appears on first page of this journal, has opened a branch establishment at 915 West St., Seattle, Wash. The Western branch is in charge of Mr. Eugene C. Kirby, vice-president of the company, who is an old oil man and he will undoubtedly make many new friends and customers for the company in his territory. A complete stock of lubricating goods will be carried at the branch store and all orders from the Pacific coast will be filled from that point.

**CITIZENS LIGHT AND FUEL Co.,** Oconto, Wis.; **Diamond Match Co.,** Oshkosh, Wis.; **W. H. Warren,** Chicago, Ill.; **W. H. Rice,** Clintonville, Wis.; **Mexico E. L. H. and P. Co.,** Mexico, Mo., and **M. B. M. Peacock,** Markesan, Wis., have placed their orders with the **Menasha Wood-Split Pulley Co.,** of Menasha, Wis., for hickory pulleys and hangers, cone pulleys, clutch pulleys and pickers.

The following letters received by The Jonathan Mills Mfg. Co. are self explanatory:

INDIANAPOLIS, IND., Feb. 5, '91.

JONATHAN MILLS MFG. CO., Columbus, Ohio.

Dear Sirs:—The writer arrived home a few days ago and found our Mr. Paine so enthusiastic over the Purifiers that he cannot rest night or day until he gets the rest of them. Thinks he will want six more. So please send them along as soon as possible. Let us know how soon we can expect them.

Yours Very Truly,

ACME MILLING CO.,

By S. F. Robinson, Pres.

MAGNOLIA, O., Dec. 15, '90.

MESSRS. JONATHAN MILLS MFG. CO., Columbus, Ohio.

Gents:—Enclosed please find my draft on First National Bank for \$... for payment of your bill of Nov. 14. We are using the Purifier on our fine middlings and it is doing excellent work. Will not make any more changes before spring. Will want two more of your Purifiers then. Yours, etc.,

A. R. ELSON.

ALLIANCE, NEB., Dec. 9, '90.

THE JONATHAN MILLS MFG. CO., Columbus, O.

Gentlemen:—Enclosed please find draft for \$... to pay for "Air Belt Purifier" and pulley as per your invoice of Oct. 20. Please acknowledge receipt. The machine is doing excellent work.

Yours Truly,

ALLIANCE MILLING CO.,

Per H. C. Draver.

At a Council meeting of the National Association of British and Irish Millers, held in London, England, on January 21, the chairman stated that the committee appointed to consider how to increase the usefulness of the Association had not been idle; they had met that very morning and closely examined many suggested improvements. He might mention that amongst these proposals was the appointment of a standing analyst, and also the engagement of a milling expert, who should be ready to advise members respecting the value of any machine, but the committee were not prepared to lay their report on the table that day.

It was suggested that in place of an expert a committee of two or three millers should be elected to examine and report on any new machinery which might be brought into the market. There was no question as to the large sums of money which millers threw away year after year in buying machinery that looked well, but turned out quite useless for the purpose required. If it were necessary, the committee might purchase and practically test machines, for in that case the cost which on a single machine would be comparatively trifling would be distributed over their whole body and not felt at all.



## MILWAUKEE ITEMS.

THE MERCHANTS' ASSOCIATION of this city are considering the matter of erecting a building of their own.

THE Cockle Separator Mfg. Co., of Milwaukee, Wis., has recent orders for Kurth Cockle Separators from Ed. Sitz, Peterson, Ia., A. M. Forest, Rochelle, Ill.; McDaniel & Co., Franklin, Ind.; Cereal Milling Co., Chicago, Ill., (large 4-cylinder machine; D.J. Tew, Rushford, Minn.; and H. R. Heath, Fort Dodge, Ia., (2-cylinder machine.)

THE Superlative Purifier Mfg. Co., of Milwaukee, Wis., has recent orders for New Era Scalpers from Deubel Bros., Ypsilanti, Mich.; Commercial Mill Co., Detroit, Mich., (second order); G. & D.M. Green, Princeton, Wis.; Sioux Rapids Mill Co., Sioux Rapids, Ia.; F. M. Moon-ey, Steubenille, O.; Walsh-De Roo Milling Co., Holland, Mich.; J. & O. C. Jenkins, New Philadelphia, O.; Spencer Milling Co., Spencer, O.; J. H. & J. T. Johnson, Centralia, Ill.; Kellogg & Buck, Morenci, Mich.; City Roller Mills, New Castle, Pa.; Minier Milling Co., Minier, Ill.; Novelty Milling Co., Parkersburg, W. Va., (second order); Strauss, Elston & Co., Marietta, O.; Farmland Milling Co., Farmland, Ind.; Thos. Moses, Sharon, Pa.; S. Bigler & Co., Painesville, O.; S. M. Stambaugh, Sharon, Pa.

THE Edw. P. Allis Company has lately been awarded several large contracts for flour mill work among which is probably the largest and most important flour mill contract ever let in this country. It calls for the complete reconstruction of the east side of the Washburn "A" mill at Minneapolis and increasing its capacity from 1,500 to 2,500 barrels. The Allis Co., is given *carte blanche* to produce the most perfect mill it knows how, and promises to make one second to none now existing. The contract involves the expenditure of about \$125,000. The work is being pushed with vigor and will be completed within the specified time which will be about May 1. The Edw. P. Allis Co. has also received the contract for enlarging and rebuilding the Zenith roller mills at Minneapolis, thereby increasing its capacity to about 1,500 barrels daily—which will involve an expenditure of about \$45,000. Still another large contract awarded this firm is for building the new 1,000-barrel mill for the Model Roller Mill Co. of Nashville, Tenn. Their contracts for work on the Columbia Mill at Minneapolis, amounting to \$75,000, has been completed. The "Columbia" now ranks as a 2,000-barrel mill.

## OUR LEGAL DEPARTMENT.

Specially prepared for The United States Miller and Milling Engineer, from the latest decisions.

**FALSE PRETENSE.**—In order to constitute the offense of false pretense, there must be secured by such false pretense either money, wares, merchandise, goods or chattels, or other valuable thing, and the procuring by false pretense of a signature to an instrument which could not be enforced against the signer if he showed that it was obtained by false pretense, is not a valuable thing, and does not constitute the offense.—*Robinson v. State*, Supreme Court of New Jersey, 20 At. Rep.

**FALSE PRETENSES.**—The charge of committing the offense of obtaining money or property under false pretenses cannot be maintained in any case unless it appears not only that a false pretense was in fact made, but also that it was made with the intention of cheating or

defrauding some person, and that such person was in fact cheated or defrauded to his or her injury. Whenever one of two innocent persons must suffer loss on account of the wrongful acts of a third, he who enabled the third person to occasion a loss must be the person who shall suffer.—*State v. Matthews*, Supreme Court of Kansas, 25 Pac. Rep. 36.

**ACCEPTANCE OF RISKS OF EMPLOYMENT.**—An employe accepts the risk of all dangers incident to his employment which are apparent to him and of which he has notice, and one who works near and around a stairway built for the use of employes which is steep and narrow, without railing and with steps at irregular distances and which he has used, is chargeable with knowledge of the defects, as they are plainly obvious, and he assumes the risks of injury in using the stairway arising from such defects.—*Sweet v. Ohio Coal Co.*, Supreme Court of Wisconsin, 47 N. W. Rep., 182.

**INJURY OF WATER-POWER BY IMPROVEMENTS OF STREAM.**—Where a city is authorized by the legislature to improve the channel of a stream by removing obstructions and altering the course where necessary, providing that any one injured in his property by any thing done in connection therewith should be entitled to compensation therefor, the owner of a mill located on the stream is entitled to damages, if, by reason of such alterations and improvements the flow of water is diminished during any part of the year, by reason of which he is injured in his business.—*Boston Belting Co. v. City of Boston*, Supreme Judicial Court of Massachusetts, 25 N. E. Rep. 613.

**TERMINATION OF CONTRACT OF EMPLOYMENT.**—Where a contract of employment is made which it is agreed shall be for one year if continued without cause of complaint, and was further agreed that it should not be terminated except upon notice of one month, the agreement that it might be terminated upon such notice must be taken in connection with the agreement regarding just cause for complaint, and without such cause the employment could not be terminated upon notice of one month, or any other notice.—*Hannay v. Zerban*, Common Pleas of New York, 11 N. Y. Supp. 577.

**SHIPMENT OF FREIGHT PRIOR TO TIME AGREED UPON.**—Where freight is delivered to a railroad company for shipment, and for any reason a future time of shipment is agreed upon, the shipper has a right to rely upon the shipment of the goods at that time and not earlier, and where a railroad company refuses to ship freight until the charges are paid and agrees to hold them a specified length of time to give the shipper an opportunity to make payment, if they are shipped before that time and the shipper sustains any damages by reason of their premature shipment he may recover such damages from the company. A contract not to ship until a certain time is just as binding as a contract to ship at a certain time, and for a breach of such a contract the company is liable as it would be for a delay in shipment.—*Campion v. Canadian Pacific Ry. Co.*, Circuit Court of the United States, Northern District of Illinois, 43 Fed. Rep. 775.

**CONSTRUCTION OF PROVISION IN INSURANCE POLICY FOR ARBITRATION.**—While a provision in a policy of fire insurance, providing that any dispute as to the amount of loss under the policy shall be settled by arbitration is valid, yet a further stipulation that no action shall

be maintained on the policy until after such arbitration, is void, as tending to oust the courts from their lawful jurisdiction. Individuals will not be permitted to contract away the jurisdiction of Courts.—*Wright v. Susquehanna Mut. Fire Insurance Co.*, Supreme Court of Pennsylvania, 20 At. Rep. 716.

**PRESENTATION OF NOTE EXECUTED BY AGENT.**—Where the word agent is affixed to the signature of a promissory note it is merely descriptive of the person and not a limitation of liability, and in order to bind the endorers of such a note it must be presented at maturity and the demand made upon the maker, and the presentation to his wife upon the averment that she was the principal for whom he acted as agent is not sufficient although she was in fact such principal. In order to bind the endorers of a promissory note presentation must be made strictly to the maker.—*Stinton v. Lee*, Supreme Court of Mississippi, 8 South. Rep. 272.

**CERTIFICATION OF NOTE BY MISTAKE.**—Where a note has been erroneously certified by the teller of a bank, although the teller is negligent in certifying it, the bank which certified it may recover back the amount paid to the holder as for money had and received by mistake, if it appears that upon discovering the error, all possible diligence was used to discover the holder and correct the error. And it is immaterial that on previous occasions the paper of the same parties had been certified without reference to the state of their account, it appearing that in each prior case this was done by express authority of the officers. One who relies upon the certification of a paying teller does so upon his own peril that the teller acts within his authority.—*National Park Bank of New York v. Steele & Johnson Mfg. Co.*, Supreme Court of New York, 11 N. Y. Supp. 538.

**RIGHTS OF ACCOMMODATION ENDORSER.**—When a note is presented to a bank for discount and discount refused unless more strongly endorsed, the fact that it is subsequently presented for discount again, with the same names, and one in addition, is enough to give the bank notice that the additional endorser is an accommodation endorser, and as such is entitled to the benefit of any collateral deposited by the maker as security for the payment of the note.—*Riverside Bank v. Tolten*, Supreme Court of New York, 11 N. Y. Supp. 519.

## PANICS IN LONDON.

THE first great crisis in the commercial history of this country took place in the year 1696, just two years after the establishment of the Bank of England. In consequence of a too liberal latitude of credit on the part of the Bank, it was compelled to suspend the payment of its own notes, and but for prompt and extraordinary assistance afforded by the Government of the day, a crisis would have followed which must have involved the country in financial ruin.

In the year 1720 came the collapse of the historic "South Sea Bubble," the climax of a long series of preposterous speculations which ruined thousands of credulous investors. This panic was stupendous in its magnitude, and the nation reeled under the blow for several years.

In the year 1746, when the Pretender invaded England with his Highlanders, there was an awful panic in the city.

Consols fell from 107 to 76 at a single jump, and other stocks and shares became practically unsalable. The Bank of England was saved from stoppage by a curious and clever stratagem. The Bank agents were entitled to be paid first, and when the great "run" upon the bank commenced they claimed their privilege. They demanded their money in sixpences, and then left by the front door to reappear at the bank. This involved great delay in dealing with the general body of credit and the breathing time thus gained saved the bank.

Another disastrous crisis began in the year 1793. A commercial house of high and honorable standing was compelled to stop payment because of the unwillingness or inability of the Bank of England to discount the firms bills. The alarm caused by this stoppage was widespread, and a general panic ensued. Over one hundred provincial banks were compelled to close their doors. Two years of bad harvests followed, and the Bank of England was armed with exceptional powers as to the issue of paper money to assist the country over its troubles.

The years 1807 and 1810 were memorable for city panics, followed by innumerable failures of commercial houses all over the country; but these were only preludes to the famous "Waterloo" year, when no less than 240 provincial banks smashed.

In 1825, as the result of extensive gambling in foreign loans—sixty millions sterling being absorbed—another big crash came. Sixty-three country banks succumbed, and the Bank of England only escaped disaster by the timely loan of two millions from the Bank of France.

In 1836 the country was deluged by a tide of speculation flowing from New York. Two hundred and fifty firms in that city became bankrupt, and trade in England was completely paralyzed. In Manchester alone no less than 50,000 artisans were thrown out of work.

The year 1847 brought the historic "railway mania," with its dismal story of ruin to thousands of English homes. Credit virtually collapsed, and the Bank of England charter was only suspended by Parliament on condition that not more than 8 per cent should be charged for discounting bills of exchange. Only bills of the highest class were dealt in even at this high rate.

What was called at the time a "financial earthquake" occurred in the year 1857. Over-speculation in American railways was the primary cause. Within two hours eighteen banks in New York stopped payment, and many Scotch bankers followed suit, with aggregate liabilities of six millions.

The year 1866—the memorable "Black Friday" year—witnessed the sudden stoppage of eight London banks and discount houses. The Bank of England charter was again suspended, and Lombard-street was declared to be in a "state of siege."

It speaks well for the soundness and elasticity of the commercial life of England that it has not only survived all these rude shocks, but that it has thrived and prospered more abundantly than ever during the quarter of a century that has elapsed since the last gigantic "panic in the city."—*City Press*, London

ALL persons desiring to reach the entire milling and grain trade of America, by circular or otherwise, should obtain a copy of **CRAWFORD'S AMERICAN FLOUR MILL AND GRAIN ELEVATOR DIRECTORY FOR 1890-91.**



## HINTS TO BE HEEDED.

**T**HE Western Manufacturers' Mutual Insurance Company and the Factory Mutual Underwriters' Union have issued a circular which should receive the special consideration of every manufacturing concern, and storekeepers and householders will do well to regard some of the many good hints embodied in the circular.

Special attention should be given at this season of the year to protecting fire apparatus against cold weather during the winter, and to ascertaining that all appliances are in order, and everything in its proper place, so as to be able to extinguish a fire, should one occur, with the smallest possible loss. As defective stoves, furnaces, stove and steam pipes, chimneys and other flues are the most prolific sources of fires, they should have proper attention at this season of the year, when they are in constant use.

In this precautionary work for the winter all hydrants and valves should be carefully examined and oiled, preferably with heavy mineral oil, which will not corrode the brass. All hydrants and standpipes and all branch hydrants should be opened after the pipes are emptied, to let out any entrapped water which may have leaked past the valve when the pipes were full, and care taken that all the drip-valves are in good condition.

The rotary pumps should be oiled, and if exposed to freezing turned backward to empty them of water. Pipes exposed to freezing should be emptied, and care taken to let the water out from above the check valves. All valves should be marked with an arrow, showing the proper direction to open them.

In all buildings equipped with automatic sprinklers, where it is impracticable to keep the buildings or rooms warm enough to prevent freezing, the system should be changed to an approved dry-pipe system. It is very important that some reliable person or persons should be put in charge of the fire apparatus, and that they should know the working of the same, and that every part is in order, and they can be sure only by making a thorough inspection as often as once a week. A fire organization among employees is essential to the handling of the apparatus.

Buckets of water are the most effective fire apparatus, as any person can handle them. They should be kept full and distributed in abundance through the various rooms or floors of nearly all risks other than dwellings. They may be placed on shelves or hung on hooks, as circumstances may require. Galvanized iron or indurated fiber pails are better than wood. They should be marked "For fire only." Casks of water are generally needed to furnish a further supply to the fire pails. To prevent freezing, add chloride of magnesium or salt to the water.

Stoves should be in order, and free from cracks, set firm on metal legs, and the floors underneath should be protected by zinc or stone, or enclosed with scantling nailed together and filled with brick and mortar or cement. They should not stand nearer unprotected wood work than three feet. Any wood work nearer than three feet should be first covered with asbestos paper, and then covered with tin, or protected in some other equally safe manner. A good guard is made of gas pipe securely screwed to the floor, and should be placed about stoves where there is a liability of stock being placed against them in manufacturing establishments.

Ashes should always be placed in a

fire-proof receptacle when taken from stoves and furnaces.

Stove pipes should be thoroughly cleaned and all unsound lengths replaced by new ones. All stove-pipes should enter good brick chimneys and should enter the chimney horizontally with but one elbow. In all mills and factories where there is considerable vibration, or where dust is liable to accumulate, the horizontal pipe lengths should be carefully riveted together and an additional pipe placed outside, leaving at least one inch air-space between the inner and outer pipes, supported at frequent intervals by wires, also well wired to hold it in the chimney. In all cases where pipes pass through wooden or lath and plastered partitions, there should be a double collar of metal, with from two to four inches air space, and holes for ventilation, or at least eight inches of masonry about it.

The chimneys should be examined carefully, especially where they pass through floors and roofs, as the settling of the building may cause cracks that would let sparks escape. A long-bladed case knife serves well as a probe for this purpose.

All pipe holes not in use should have close-fitting stoppers. There should be no woodwork of any kind framed into chimneys, and the entire surface of the trimmers and headers next to the flue should be entirely covered with tin or light sheet iron.

Where steam pipes pass through floors or partitions, the woodwork should be cut away from around the pipe at least two inches, and covered with asbestos paper, and then covered with tin. Cut a V-shaped piece out of the tin where it passes through the wood on both sides, and nail securely to the woodwork. The pipes should be supported by gas or steam pipes, earthen rings, or other equally safe material. Do not permit the pipes to come in contact with any woodwork or other inflammable material.

## MILLING AND MECHANICAL NOTES.

**AN EXPERIMENT WITH A LUBRICANT** BY MR. G. BISSELL OF ITHACA, N. Y.—This experiment was undertaken for the purpose of determining the law governing the variation of the coefficient of friction of a lubricant, and the rate of feed of the same to the journal, all other conditions being constant. It was conducted in the Mechanical Laboratory of Sibley College. From the data obtained the author decided the rate of feed should in every case be so high, at least, that the coefficient of friction will not vary. The temperature was maintained constant by circulation of water through the brasses of the Thurston railroad lubricant testing machine, which was used in the experiments. Tests were made with loads of 2000 lb., 3000 lb., and 4000 lb. on the journal, corresponding to about 70 lb., 105 lb., and 140 lb. per square inch. The results indicate that with low rates of feed the effect of pressure on the coefficient of friction is practically nil, which would tend to prove that under such conditions lubricated rubbing surfaces follow the laws of solid or "immediate" friction; but at the rate at which this state of affairs begins to be apparent the augmentation of the coefficient is dangerous to the continuance of the smooth running of the journal. It is unsafe to reduce the rate of feed below .003 c.c. per square inch of projected area of journal per minute.

**THE STEAM CYLINDER.**—A good deal of recent discussion brings out prominently once more how little the wisest really know about the behavior of steam

in the cylinder of a steam engine. Just now the discussion as to the utility of the steam jacket is in the front, and the conflicting testimony and opinions are anything but reassuring. The unprejudiced engineer is likely to conclude, from all this discussion, that there are cases where the steam jacket represents economy; also that there are cases where it brings about the reverse. But just what brings about this difference no one is wise enough to tell. What is needed is further knowledge of the law governing the condensation of steam in the cylinder of a steam engine; how it is affected by different conditions, etc. Then from this as a standpoint, figures can be made to apply to steam jacketing. Until a good deal more is learned about condensation of steam, the doctors will disagree as to the value of any means tending to prevent it. — *American Machinist.*

**ROPE DRIVING.**—Charles W. Hunt in a recent essay on this subject, describing the methods of conveying power by cotton or manilla rope and their limitations, so that the engineer can decide on the advantages or disadvantages of any proposed speed, says: "Horse-power, wear of rope, first cost of rope, and catenary are the main features." He stated, as a result of experiment and observation, that 200 lbs. on a rope 1 in. in diameter is a safe and economical working strain; when this strain is increased materially the wear is rapid. He found on investigation the normal working strain on cordage to be one-thirty-sixth of the breaking strain, and one-twenty-fifth of the strength at the splice. The actual strains are greater, owing to vibration and imperfectly adjusted tension mechanism. At a speed of 80 ft. per second the centrifugal force increases faster than the power from increased velocity of the rope, and at about 140 ft. equals the assumed allowable tension of the rope. Computing this force at various speeds, and then subtracting it from the assumed maximum tension, gives the force available for the transmission of power.

**LOOSE PULLEYS.**—There is really no necessity for a loose pulley becoming a nuisance, provided it is properly constructed in the first place and well taken care of afterward. One of the principal faults in construction is imperfect balancing and the manner in which the oil is applied to the shaft. Frequently the loose pulley with a light hub is provided, with no other facilities for oiling except a hole drilled through the hub—perhaps not more than one-fourth of an inch in diameter—with no provision made for either retaining the oil or excluding the dust. A wooden plug is sometimes inserted, and while this may answer a good purpose for excluding the dust, is necessarily of such a length that when forced in the oil-hole the greater portion of the oil that has been applied is forced out, so that only a few drops are left to answer any useful purpose; and while a small space on each side of the oil-hole may be lubricated, the ends will often be found dry and cutting. With such pulleys, no matter how careful the operator may be, it will only be a question of a short time when they will begin to rattle and become a general nuisance.

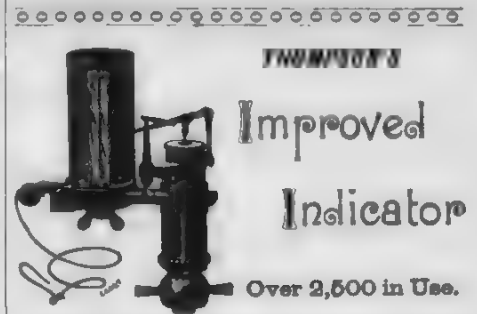
**THE** report of the Bureau of Statistics for the month of January, 1891, in its statement of the exports of domestic breadstuffs shows that the amount of wheat flour exported during the month was 1,060,784 barrels, against 899,875 barrels for same time 1890. The total valuation of breadstuffs exported during the month was \$9,718,586, while for the same month, 1890, it was \$11,557,620. The list of breadstuffs includes wheat, wheat-flour, rye, oats, oat-meal, corn, corn-meal and barley.

## American Steam Gauge Co.

—SOLE MANUFACTURERS—

## Bourdon Steam Gauges

WITH LANE'S IMPROVEMENT.



## AMERICAN POP SAFETY VALVES

For Locomotive, Stationary and Portable Boilers, and Instruments incidental to the use of Steam. Send for Price List I.

36 Chardon St., BOSTON, MASS.

Send for Catalogue K.

## NOW READY.

## Experimental Science

By GEO. M. HOPKINS.

740 Pages. 683 Illustrations.

PRICE, by mail, postpaid, - - \$4.00

Address:

UNITED STATES MILLER and MILLING ENGINEER, MILWAUKEE, WIS.

## Patents for Inventors.

## CHAS. E. BROCK,

Solicitor of Patents,

Pacific Building, WASHINGTON, D. C.

All matters relating to patents promptly and carefully attended to. Caveats filed. Trademarks registered, and Designs patented. Write for particulars. Correspondence in English or German.

## FOR SALE—In Wisconsin.

125-bbl. roller flour mill, 4 stories, frame with stone basement, including plenty water power for 4 water wheels. Flume, dam and mill in good condition. Frame warehouse and office close by, and long sheds for farmers' teams. The whole property in full operation 16 hours daily, doing profitable business. Has big grist business. City of 2,000 population; two railroads. Good trade with citizens, farmers and lumber men, for flour, feed and rye. Good local grain, and plenty of it. Good place to live, has good schools and churches, and close to other large cities. Owner non-resident, which is reason for selling. Address, MENASHA WOOD SPLIT PULLEY CO., MENASHA, WIS.

4-11

## A GREAT SNAP.

We offer for sale a first-class steam flouring mill at a price that will astonish you. Capacity 100 barrels, situated in the Solmoon Valley, the best wheat country in Kansas. In good repair, and running steady. Elevators and warehouses complete. On the U. P. R. R. Address

12-31

BANK OF GLASCO, Glasco, Kans.

## FOR SALE.

Having lost my water power, I offer for sale my complete outfit for a small mill, consisting in part of one of E. P. Allis Co's 4 break roller mill, 2 pairs single rolls, burrs, bolts, purifiers, cleaning machines, scales, elevators, belting, etc. Correspondence solicited. M. J. LAIRD, Winona, Minn.

2-11

**MORE RECIPROCITY.**—A proclamation of reciprocity with Venezuela, similar in terms to that made with Brazil, is announced and takes effect about the same time as the agreement with the latter. While the commerce of Venezuela is not so large as that of Brazil, this country has for several years enjoyed a much larger proportion of its importing business than any other nation dealing with Venezuela. The imports of Venezuela in 1886 were about \$9,000,000 of which amount they took from us more than \$2,000,000, and in 1888 they took from the United States products to the amount of \$3,000,000, which includes about \$600,000 worth of breadstuffs, principally wheat flour.



**DON'T BE A MILLER.**

Since time began it's been in vogue  
To call the miller arrant rogue.  
He may be honest, true and brave,  
But still he's dubbed the city knave.  
He grinds your grist and takes his toll—  
Just what was right—but then he stole,  
And nothing good was ever said  
About a miller, until dead.  
Some of his patrons will insist  
He stole their sacks as well as grist,  
And then they try to make it seem  
He followed 'round to steal the team.  
So, if by labor you exist,  
Just swear you'll never grind a grist.  
Work at something, dig or bust,  
And save yourself from being cussed.  
Daily Business.

**FINAL GOVERNMENT CROP REPORT FOR 1890.**

**T**HE estimates of the products of corn, wheat and oats of 1890, as completed by the statistician of the Department of Agriculture, and published January 10, make corn aggregate 1,489,970,000 bushels, wheat 399,262,000 bushels, oats 523,621,000 bushels. The area of corn, which was slightly increased in planting, was reduced by utter failure and abandonment by more than 6,000,000 acres, the area harvested being 70,970,763 acres. The average yield per acre was 20.7 bushels, and the supply for consumption per head of population is 23 bushels, or 11 bushels less than last year. The rate of yield was lower in 1887 and 1881, years of very severe drouth.

The aggregate wheat area is 37,087,154 acres, nearly the same as in 1889, and the yield per acre 11.1 bushels. These are measured bushels of a quality grading somewhat lower than usual, the weight of which will be given in the March report. Past records have shown that the annual differences in weight of the crop are not often more than a pound above or below the average weight for a series of years, the lowest for seven years being 56.5 in 1888 and the highest 58.5 in 1887. The yield per acre is the same as in 1888, when the product was nearly 416,000,000 bushels, and with two exceptions, is the lowest rate during the past decade.

The area in oats was 26,431,369 acres, and the yield per acre was 19.8 bushels. This is only 74 per cent of the average of ten years past, which was 26.6 bushels, and the smallest rate of yield ever reported by this office.

The December condition of the growing wheat crop is returned at 98.4, and of rye 99. This is better than the December returns for two years past. Along the Atlantic coast a slight depreciation is noted as the result of excessive moisture in some localities, making planting late and giving rather small growth before the advent of freezing weather. In the Ohio valley the season was generally favorable for seeding and early growth, and the plant entered winter quarters in promising condition. Some damage was done by the Hessian fly, especially in early sown fields. Condition in Missouri and Kansas was variable, local injury from drouth and fly combining to somewhat reduce the state averages.

**CONTINENTAL MONEY.**

**T**HE condition of American finance in 1780 was simply horrible. Pelatiah Webster, the ablest political economist in America at that time, a thinker far in advance of his age, was almost alone in insisting upon taxation. The popular feeling was expressed by a delegate in Congress, who asked with unspeakable scorn why he should vote to tax the people, when a Philadelphia printing

press could turn out money by the bushel. But indeed Congress had no power to lay any tax save through requisitions upon the State governments. There seemed to be no alternative but to go on issuing this money, which many people glorified as the "safest possible currency," because "nobody could take it out of the country." As Webster truly said, the country had suffered more from this cause than from the arms of the enemy. At the end of the year 1778 the paper dollar was worth sixteen cents in the Northern States and twelve cents in the South. Early in 1780 its value had fallen to two cents, and before the end of the year it took ten paper dollars to make a cent. In October Indian corn sold wholesale in Boston for \$150 a bushel, butter was \$12 a pound, tea \$90, sugar \$10, beef \$8, coffee \$12, and a barrel of flour cost \$1,575. Samuel Adams paid \$2,000 for a hat and suit of clothes. The money soon ceased to circulate, debts could not be collected, and there was a general prostration of credit. To say that a thing was "not worth a Continental" became the strongest possible expression of contempt. A barber in Philadelphia papered his shop with bills, and a dog was led up and down the streets, smeared with tar, with this unhappy money sticking all over him—a sorry substitute for the golden-fleeced sheep of the old Norse legend. Save for the scanty pittance of gold which came in from the French alliance, from the little foreign commerce that was left, and from trade with the British army itself, the country was without any circulating medium. In making its requisitions upon the States, Congress resorted to a measure which reminds one of the barbaric ages of barter. Instead of asking for money, it requested the States to send in their "specific supplies" of beef and pork, flour and rice, salt and hay, tobacco and rum. The finances of what was soon to become the richest of nations were thus managed on the principle whereby the meagre salaries of country clergymen in New England used to be eked out. It might have been called a continental system of "donation parties."

—Atlantic Monthly.

**WIRE ROPE.**

**A** WIRE ROPE manufacturing company gives the following hints. There are two kinds of wire rope manufactured. Ropes with nineteen wires to the strand are more pliable and are generally used as hoisting ropes. Those with twelve or seven wires to the strand are stiffer and best adapted for guys, ferries, rigging and transmission purposes. Wire ropes are made of six strands, laid about a center of hemp or wire, the former being more pliable, and wearing better over small pulleys and drums.

Wire rope is as pliable as new hemp rope of the same strength. The greater the diameter of sheaves, pulleys and drums, the longer the rope will last.

For safe working load, allow one-fifth to one-seventh of ultimate strength, according to speed and vibration. Speed increases the wear.

Wire rope must not be coiled or uncoiled like hemp rope. When not on a reel, roll upon the ground like a wheel to prevent kinking.

To preserve wire rope, cover it thoroughly with raw linseed oil, mixed with vegetable tar. This mixture forms a protecting surface, and preserves it from undue wear.

To preserve wire rope under water or

**ENGINE AND BOILER FOR SALE.**

A 25 horse-power Reynolds Corliss engine, with 40 horse-power boiler and heater and connections, all in first-class condition and in use at present. To be delivered in May, 1891. A bargain for anyone in need of same. Reason for selling, more power required. For further information address,

RIVERSIDE PRINTING & ENG. CO.,

111f

124 Grand Avenue, MILWAUKEE, WIS.

**ORGANIZATION OF MILLERS IN THE UNITED STATES.****THE MILLERS' NATIONAL ASSOCIATION.**

President—A. R. JAMES,  
1st Vice-Pres't—W. M. SANDERSON,  
2d Vice-Pres't—H. L. HALLIDAY,  
Treasurer—S. H. SEAMANS,  
Secretary—FRANK BARRY,

Buffalo, N. Y.  
Milwaukee, Wis.  
Cairo, Ill.  
Milwaukee, Wis.  
Milwaukee, Wis.

**BOARD OF DIRECTORS.****STATE.**

\*C. B. Cole, Chester.....ILLINOIS.....  
M. S. Bligh, Seymour.....INDIANA.....  
C. R. Underwood, Salina.....KANSAS.....  
P. H. Macgill, Baltimore.....MARYLAND.....  
\*W. B. Knickerbocker, Albion.....MICHIGAN.....  
\*A. C. Loring (chairman), Minneapolis.....MINNESOTA.....  
Geo. H. Plant, St. Louis.....MISSOURI.....  
C. C. White, Crete.....NEBRASKA.....  
\*Geo. Urban, Buffalo.....NEW YORK.....  
Jno. M. Turner, Mandan.....NORTH DAKOTA.....  
Homer Baldwin, Youngstown.....OHIO.....  
W. Latimer Small, York.....PENNSYLVANIA.....  
W. H. Stokes, Watertown.....SOUTH DAKOTA.....  
\*Wm. Sanderson, Milwaukee.....WISCONSIN.....

\* Members of Executive Committee.

**OFFICERS OF STATE ASSOCIATIONS.**

President, E. C. Kreider, Jacksonville.  
Secretary, C. H. Seybt, Highland.  
President, F. E. C. Hawkes, Goshen.  
Secretary, E. E. Perry, Indianapolis.  
President, H. Warkentin, Newton.  
Secretary, W. T. Hopkins, Enterprise.  
President, P. H. Macgill, Baltimore.  
Secretary, J. O. Norris, Baltimore.  
President, W. B. Knickerbocker, Albion.  
Secretary, M. A. Reynolds, Stanton.  
President, P. L. Greenleaf, Minneapolis.  
Secretary, W. C. Edgar, Minneapolis.  
President, S. M. Carter, Hannibal.  
Secretary, H. C. Craft, St. Louis.  
President, O. A. Cooper, Humboldt.  
Secretary, D. H. Harris, Bennett.  
President, A. R. James, Buffalo.  
Secretary, H. F. Shuttleworth, Buffalo.  
President, J. S. Hillyer, Bismarck.  
Secretary, J. M. Turner, Mandan.  
President, Homer Baldwin, Youngstown.  
Secretary, M. H. Davis, Shelby.  
President, B. F. Isenberg, Huntingdon.  
Secretary, L. Levan, Lancaster.  
President, L. G. Heynon, Brookings.  
Secretary, C. A. Lunn, Aberdeen.  
President, E. J. Lachmann, Neenah.  
Secretary, L. R. Hurd, Milwaukee.

under ground, add one bushel of fresh-slacked lime to a barrel of mineral or vegetable tar, boil well, and saturate the rope with the mixture hot.

Galvanized wire rope should never be used for running rope. One day's use will wear off the coating of zinc, and the rope will soon begin to rust.

Too much care cannot be taken with the pulleys, sheaves and drums over which ropes are run. The grooves should be lined with well-seasoned blocks of hard wood set on end, rubber, leather or some soft metal. Thus the life of the rope will be greatly lengthened and greater adhesion secured than when the rope is operated over smooth and hard surfaces.

Iron ropes, operated under proper conditions will give perfect satisfaction when the work to be done is not too heavy. Steel ropes should be substituted for iron when lightness is required or when a greater strength becomes necessary. The object in substituting steel for iron is to decrease the wear rather than reduce the size of the rope.  
—The Engineer.

**FOREIGN ITEMS.**

INDIA is building flour mills on the roller principle, and from the returns of the Bombay Flour Company, a profitable business has been secured, paying a dividend of 15 per cent.

RUSSIAN millers of the province of Tver propose to make a strong effort to convince the people of London that their flour is superior to the American article. They have compared the American flour usually quoted on the London market with Russian flour, and they claim that the comparison proved unfavorable to the American flour. In order to show the Londoners the "superiority" of their flour they will establish a bakery in the metropolis where only Russian flour will be used in making bread.

A CURIOUS CUSTOM.—The following superstitious custom prevails in certain parts of France, especially in the "Aron-disement" of Boulay. On the day before Epiphany twelve full-sized grains of wheat are placed in a row on the stove. Each grain represents a month in the year. The heat causes the grains to burst and move from their places.

Next day the distance which separates each grain from the straight line is measured in order to ascertain which has jumped the farthest. Supposing it to be, for instance, the eighth grain in the row, it is taken to mean that the price of wheat will be highest in the eighth month of the year, i. e., in August.—*Il Corriere Nazionale.*

THE *Mark Lane Express* (London) says: What are our "miscellaneous" yearly receipts of breadstuffs? The United States, Russia, and India are the three great foreign powers recognized at Mark Lane, and after them come Australia, Canada, New Zealand, Germany, Austria, Roumania and Chili. A comparison of recent years shows that these ten countries send us *within a million qrs.* of our total imports. The receipts from all other powers were 747,287 qrs. in 1888-9, 945,008 qrs. in 1889-90, and for four months of 1890-91 they have been 303,226 qrs. The chief of the extra countries is La Plata, then comes Persia and then Turkey. Now and again a cargo comes from France, Egypt, or Sicily, while small consignments have been recorded from Morocco, Algeria, Tunis, Tripoli, and even Japan.

THE HUNGARIAN MILLS IN 1890.—The Pesth milling companies have had a much more profitable year in 1890 than in 1889, the result being a decided advance in the market value of their respective shares, which compare with the quotation at the end of 1889 as follows:

	1889.	1890.		1889.	1890.
Concordia.....	43 3/4	49 7/8	Wals-Muehl.....	5 5/8	5 3/4
Elizabeth.....	2 3/4	3 7/8	Victoria.....	1 1/2	2 1/4
Louise.....	3 3/4	4 7/8	Ofen-Pester.....	3 5/8	10 1/2
Miller & Baker.....	4 1/2	4 5/8	Pannonia.....	7 3/4	9 1/2

The following dividends have already been declared: Ofen-Pester 70fl., Miller & Baker 35fl., Elizabeth 28fl. to 30fl., Louise 16fl., Victoria 20fl., Wals Muehl 25fl. to 30fl., Concordia 35fl., Pannonia 50fl. to 60fl. per share. The Hungarian wheat crop, it must be remembered, was this year the biggest on record, and its effect will probably be felt all through the present year. Since 1886 the yield of each year has been as follows: Wheat 36,245,000hects; 1887 51,420,000hects; 1888 47,880,000hects; 1889 32,958,000hects; 1890 54,679,000hects. (A hectolitre is equal to 2 3/4 bushels.)

We shall be pleased to receive from any of our readers, short, crisp, sensible letters on subjects of interest to the flour and grain trade for publication.



**"THE FINEST ON EARTH."**

The Cincinnati, Hamilton & Dayton R. R. is the only line running Pullman's perfected safety vestibule trains, with chair, parlor, sleeping and dining car service between Cincinnati, Indianapolis and Chicago, and is the only line running through reclining chair cars between Cincinnati, Keokuk and Springfield, Ill., and combination chair and sleeping car Cincinnati to Peoria, Ill., and the only direct line between Cincinnati, Dayton, Lima, Toledo, Detroit, the lake regions and Canada.

The road is one of the oldest in the State of Ohio and the only one entering Cincinnati over twenty-five miles of double track, and from its past record can more than assure its patrons speed, comfort and safety. Tickets on sale everywhere, and see that they read C. H. & D., either in or out of Cincinnati, Indianapolis, or Toledo. E. O. McCORMICK, General Passenger and Ticket Agent, Cincinnati, Ohio.

**The Winter Resorts of Florida and the Sunny South.**

At no time in the history of southern travel have the indications pointed to so brilliant a season as the Winter Resorts of Florida and the South as is promised for 1903-04. At Jacksonville, St. Augustine, and along the Indian River extensive preparations have been made for the entertainment of northern guests, and all visitors can rest assured of the old-time hospitality for which the southern host is famous. With its customary enterprise, the Big Four Route, "The Great Florida Line," has placed on sale round-trip tickets at greatly reduced rates, and made special preparations to handle the southern tourist business. All persons contemplating a trip to Florida should ask for tickets via that popular line. Solid vestibule trains run daily between Chicago and Cincinnati, equipped with private compartment buffet sleeping-cars, and elegant parlor cafe dining-cars, lighted by gas and heated by steam, making direct connection in Central Union Depot at Cincinnati with through trains for all points in the South. Ask for tickets via the Big Four Route.

D. B. MARTIN,  
General Passenger Agent,  
Cincinnati, O.

**REGENT MILLING PATENTS.**

The following are a list of Patents relating to Milling and Grain-handling appliances, granted during the month of January, as specially reported for the U. S. MILLER, by Chas. E. Brock, Patent Attorney, Pacific Building, Washington, D. C.:

- No. 444,348, Roller grinding-mill, W. D. Gray, Milwaukee, Wis., assignor to E. P. Allis Company of Wisconsin.
- No. 444,349, Roller grinding-mill, W. D. Gray, Milwaukee, Wis., assignor to the E. P. Allis Company, of Wisconsin.
- No. 444,350, Roller grinding-mill, W. D. Gray, Milwaukee, Wis., assignor to the E. P. Allis Company, of Wisconsin.
- No. 444,351, Flour or meal bin and sifter, W. H. Hammer, Washington, Ohio.
- No. 444,745, Coal and grain chute, W. W. Emery, Minneapolis, Minn.
- No. 444,763, Grain-scouring machine, W. Morgan, Chicago, Ill.
- No. 444,798, Coffee-mill, E. H. & C. Morgan, Freeport, Ill., assignor one-third to A. Bumgarten, same place.
- No. 444,838, Seed-sheller, C. A. Lees, Christchurch, New Zealand, S. W. Lester, Sydenham, New Zealand, assignors to the Canterbury. (N. Z.) Seed Company, Limited, Christchurch, New Zealand.
- No. 444,847, Process of comminuting seeds and spices, H. R. Pomeroy, Indianapolis, Ind., assignor of two-thirds to E. E. Stout, same place.
- No. 445,071, Crushing-mill, A. Olsen, Hallock, Minn.
- No. 445,089 Screen, W. E. Selleck, Chicago, Ill.
- No. 445,133, Separator, A. Cook, W. L. Harvey, San Francisco, Cal., assignors of one-third to T. J. Parsons, same place.

THERE are few mills in this part of the country that ship as much flour to the British Isles as do those of Appleton, says the Appleton (Wis.) Post. The two carloads shipped from here Feb. 9, to London and Dundee contained as fine flour as is made in the country. Appleton is fast gaining a world-wide reputation for its flour as well as for its paper.

ABOUT a month ago a number of Minneapolis capitalists organized a company to build and operate three large flour mills in Superior, Wis. The site and capital have been secured and investigations are being made to determine the cost of operating. The idea is to use electricity for the power, and a Chicago company is figuring on the cost of a plant therefor. The name of the mills will be the Great Northern Flour Mills.

THE  
Cleveland, Cincinnati, Chicago & St. Louis  
RAILWAY.

**BIG FOUR ROUTE**

BETWEEN  
CHICAGO  
INDIANAPOLIS  
CINCINNATI.

The Only Line running the Popular Buffet Sleeping Cars between

**CHICAGO and CINCINNATI**

The Only Line from Chicago running Solid Vestibule Trains into Central Union Depot, Cincinnati, where connection is made with Through Car Lines for Florida, avoiding all disagreeable transfers.

Through Tickets via the Big Four Route can be procured at all Ticket Offices in the Northwest.

O. G. MURRAY, Traffic Manager. D. B. MARTIN, Gen'l Pass'r Agent.  
CINCINNATI, O.

**Grand Haven Route**

D., G. H. & M. R'y.

THE SHORT LINE TO POINTS IN

**Michigan, Canada and the East**

AND THE FAVORITE TOURIST ROUTE TO

Niagara Falls, Thousand Islands, Rapids of the St. Lawrence, Mountain and Seashore Resorts.

Steamers leave Milwaukee daily, except Saturdays, at 8.00 P. M., and connect the following morning with the daylight limited, which reaches Niagara Falls at 7.40 P. M., Toronto 7.30 P. M., Montreal 7.30 A. M., New York 9.40 A. M., Boston 11.40 A. M.

PARLOR AND BUFFET CARS  
GRAND HAVEN to NIAGARA FALLS  
SLEEPING CARS TO  
NEW YORK and BOSTON

The only daily line to Muskegon, and the quickest route to the Saginaws and Bay City.

JOHN W. LOUD, Traffic Manager. B. C. MEDDAUGH, Western Pass'r Agent.  
DETROIT. 99 Wisconsin St., MILWAUKEE.

DO YOU INTEND TO BUILD?  
PRACTICAL LOW-COST HOUSES. HOW TO BUILD THEM.



A Large Atlas, containing drawings and floor plans of 40 Modern Houses with Complete Estimates of cost of building. All kinds of buildings ranging from a \$400 cottage to a \$10,000 residence. The latest, most complete, and only practical book published. It is false economy to attempt to build without these plans. Price by mail, post-paid, 50 cts. Stamps taken.

ADDRESS,  
United States Miller and Milling Engineer,  
MILWAUKEE, WIS.

**MONTANA, OREGON AND WASHINGTON.**

Colonists for Montana, Oregon, Washington or British Columbia points should take no other line than the Northern Pacific Railroad.

This railroad, with its main and branch lines, has brought into communication with the east all prominent sections of the great north-west. It is the only line traversing Montana and Washington. It is the only line running through trains from the east to and through the State of Washington. It is the short line from St. Paul to Butte City and Helena, Mont., Spokane Falls, Wash., and Portland, Oregon, and the only all rail line to Tacoma and Seattle, Wash.

Under present arrangements Pullman sleeping cars and furnished tourist sleepers are run via the Wisconsin Central, and Pullman Palace Sleepers via the Chicago, Milwaukee and St. Paul, and Northern Pacific from Chicago through to the Pacific coast without change.

In addition to this service the Northern Pacific runs on its through express trains regular day coaches, dining cars and free colonist sleepers from St. Paul to Tacoma and Portland.

The Northern Pacific line allows the holders of second class tickets to stop at Spokane Falls, Wash., and at all points west thereof, ten days at each place desired. This will enable settlers to thoroughly examine all lands in the new State before selecting a permanent location. No other line offers holders of second-class tickets an opportunity of examining all sections of this great State without the payment of additional fares of from \$5.00 to \$20.00.

For Maps, Time Tables, and Illustrated Pamphlets, or any special information desired, address your nearest ticket agent, or CHAS. S. FEE, Gen'l Pass. and Ticket Agent, St. Paul, Minn.

As showing the effect of elasticity of belts, says an exchange, it is a fact that owing to the slip, elasticity and thickness of a belt the circumference of the driven pulley does not run as fast as the circumference of the driver, and taking two pulleys of the same diameter one can be made to run twice as fast as the other without slipping, by using an elastic rubber belt.

THE CHICAGO AND  
NORTH-WESTERN  
RAILWAY.

Affords unrivaled facilities for transit between the most important cities and towns in Illinois, Iowa, Wisconsin, Northern Michigan, Minnesota, North and South Dakota, Nebraska and Wyoming.

The train service is carefully adjusted to meet the requirements of through and local travel and includes

**Fast Vestibuled Trains**

Dining Cars, Sleeping Cars and Day Coaches Running Solid between Chicago and ST. PAUL, MINNEAPOLIS, COUNCIL BLUFFS, OMAHA, DENVER and PORTLAND, ORE.

Pullman and Wagner Sleepers CHICAGO TO SAN FRANCISCO WITHOUT CHANGE.

COLONIST SLEEPERS CHICAGO TO PORTLAND, ORE. and SAN FRANCISCO.

FREE RECLINING CHAIR CARS CHICAGO TO DENVER & PORTLAND, ORE. Via Council Bluffs and Omaha.

For time of trains, tickets and all information, apply to Station Agents of the Chicago & North-Western Railway, or to the General Passenger Agent at Chicago.  
W. E. NEWMAN, 2d Vice-Pres. J. M. WHITMAN, Gen. Manager. E. F. WILSON, Gen. Pass. Agt.



Fast Mail Line with Electric Lighted and Steam Heated, Vestibuled Trains between Chicago, Milwaukee, St. Paul and Minneapolis.

Trans-Continental Route with Electric Lighted and Steam Heated Vestibuled Trains between Chicago and Council Bluffs, Omaha or St. Paul and the Pacific Coast.

Great National Route between Chicago, Kansas City and St. Joseph, Mo.

6700 Miles of Road reaching all principal points in Illinois, Wisconsin, Minnesota, Iowa, Missouri, South Dakota and North Dakota.

For Maps, Time Tables, rates of passage and freight, etc., apply to the nearest station agent of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, or to any Railroad Agent anywhere in the World.  
ROSWELL MILLER, A. V. H. CARPENTER, General Manager. Gen'l Pass. and Tkt. Agt.

For information in reference to Lands and Towns owned by the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY, write to H. G. HAUGAN, Land Commissioner, Milwaukee, Wisconsin.

Choice of 3 Trains  
VIA  
MONON ROUTE

BETWEEN  
CHICAGO and  
INDIANAPOLIS,  
CINCINNATI,  
LOUISVILLE,  
LEXINGTON.

Unsurpassed Pullman Car Service.

Fast Trains. Sure Connections.

Short Route to Florida.

Be sure your tickets read via Monon Route (L. N. A. & C. R'y), and your comfort is guaranteed.

For Maps, Guides, etc., address  
JAMES BARKER, Gen'l Pass'r Agent, CHICAGO.  
Adams Express Building.

THE  
WISCONSIN  
CENTRAL  
LINES  
NORTHERN PACIFIC  
RAILROAD CO.  
LESSEE

Fast Trains with Pullman Vestibuled Drawing Room Sleepers, Dining Cars and Coaches of latest design, between Chicago and Milwaukee and St. Paul and Minneapolis.

Fast Trains with Pullman Vestibuled Drawing Room Sleepers, Dining Cars and Coaches of latest design, between Chicago and Milwaukee and Ashland and Duluth.

Through Pullman Vestibuled Drawing Room and Colonist Sleepers via the Northern Pacific Railroad between Chicago and Portland, Ore.

Convenient Trains to and from Eastern, Western, Northern and Central Wisconsin points, affording unequalled service to and from Wausau, Fond du Lac, Oshkosh, Neenah, Menasha, Chippewa Falls, Eau Claire, Hurley, Wis., and Ironwood and Bessemer, Mich.

For tickets, sleeping car reservations, time tables and other information, apply to Agents of the line, or to Ticket Agents anywhere in the United States or Canada.

S. E. AINSLIE, General Manager, Milwaukee, Wis. J. M. HANNAFORD, Gen'l Traffic Manager, St. Paul, Minn. H. C. BARLOW, Traffic Manager, Chicago, Ill. LOUIS BOKSTEIN, Gen'l Pass'r & Ticket Agt., Chicago, Ill.

THE  
ASHLAND  
MILWAUKEE  
LAKE SHORE &  
WESTERN R'y

**Through Sleeping & Parlor Car Line**

WITH  
FAST TRAINS

**CHICAGO AND MILWAUKEE**

TO  
Appleton, Wausau & Ashland

THE GOGEBIC, PENOKEE AND MONTREAL IRON AND MINERAL RANGES.

Hurley, Ironwood, Bessemer and Wakefield

The Manufacturing Centers and Lumbering Districts of Central and Northern Wisconsin.

SHEBOYGAN, MANITOWOC, KAUKAUNA, APPLETON, WAUSAU, ANTIGO, EAGLE RIVER and RHINELANDER.

The only line reaching the celebrated fishing resorts of Northern Wisconsin and Michigan.

Gogebic, Tomahawk and Pelican Lakes,

Rhinolander, Eagle Waters, Twin Lakes, Lake Vieux Desert, Watermeet.

The ONTONAGON, BRU.E and other Trout Streams.

Noted for their excellent Muskellunge, Bass, Pike, Pickerel and Trout fishing.

**DIRECT LINE**

Via New London June and G. B. W. & St. P. R. R.

FOR  
SEYMOUR, GRAND RAPIDS, AND STEVENS POINT.

Via ASHLAND and NORTHERN PACIFIC R. R.

FOR  
SUPERIOR, DULUTH,

PACIFIC COAST AND INTERMEDIATE POINTS.

Guide Books, Maps, Time Cards and full information furnished on application to the Gen'l Pass. Agt. Chas. L. Ryder, Gen'l Agt. 107 Clark Street, A. W. Russell, City P. & T. Agt. CHICAGO.

Milwaukee City Office, 95 Wisconsin Street.

H. F. WHITCOMB, General Manager. ERNEST VLIET, Gen. Pass. Agt.

MILWAUKEE, WIS.



94 Miles the Shortest,

8 Hours the Quickest,

**CINCINNATI to NEW ORLEANS**

Time, 27 Hours.

Entire Trains, Baggage Car, Day Coaches and Sleepers run through without change.

110 Miles the Shortest,

7 Hours the Quickest,

**Cincinnati to Jacksonville, Fla.**

Time, 26 Hours.

Through Sleepers without change. The Short Line between Cincinnati and

Lexington, Ky.	Time, 3 1/2 Hours.
Knoxville, Tenn.	" 13 "
Asheville, N. C.	" 17 "
Chattanooga, Tenn.	" 11 "
Atlanta, Ga.	" 15 "
Birmingham, Ala.	" 16 "

Direct Connections at New Orleans, and Shreveport, for Texas, Mexico and California.

Trains leave Central Union Depot, Cincinnati, crossing the Famous High Bridge of Kentucky, and rounding the base of Lookout Mountain.

Over One Million Acres of Land in Alabama, the Future Great State of the South, subject to pre-emption. Unsurpassed Climate.

For Rates, Maps, etc., address,

C. S. HENRY, Traveling Passenger Agent,  
193 Clark St., Chicago, Ill.

C. C. HARVEY, CINCINNATI, D. G. EDWARDS,  
Vice Pres't. OHIO. G. P. & T. A.

Goodrich Steamers  
ON REGULAR TIME

**LEAVE MILWAUKEE FOR**

Chicago daily, Saturdays excepted, at 7:00 P. M.

Racine daily, Saturdays excepted, at 7:00 P. M.

Sheboygan daily, Sundays and Mondays excepted, at 7:00 A. M.

Manitowoc daily, Sundays and Mondays excepted, at 7:00 A. M.

Sheboygan on Sundays and Mondays at 7:00 P. M.

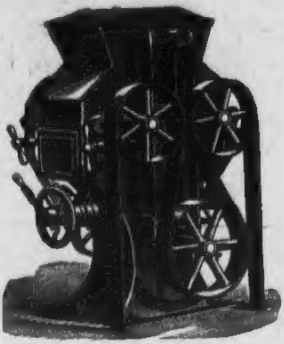
Manitowoc on Sundays and Mondays at 7:00 P. M.

Kewaunee and Ahnapee Saturdays at 7:00 A. M.

THOMAS FORBES, Passenger Agent. G. HURSON, Sec. and G. T. M.

EXPORTING millers should write to the Riverside Printing Co., Milwaukee, Wis., for the best Flour Cable Code ever published. There are more copies of this Code in use than of ALL other flour codes published. It is simple and accurate. It is called "The Riverside Flour Cable Code."





THE KEYSTONE

4 ROLLER WHEAT MILL.

## Flour Mills.

## Corn Mills.

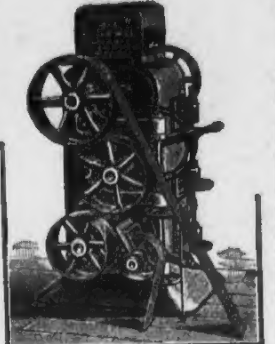
## Hominy Mills.

ALBIA, IA., July 15, 1890.  
The J. B. Allfree Co., Indianapolis, Ind.:  
Dear Sirs: We have now been running our mill for about a week, and it is giving us entire satisfaction in every respect.  
We are doing splendid work, and our flour is ahead of anything that comes to this market, and we have some good mills to compete with; among others, Kelly & Lisle, Leavenworth, Kans.; Blair & Auld, Atchison, Kans.; Louisiana, Mo., Mills, and many others.  
Our straight grade is whiter than any patent on this market, and our patent is par excellence. We hereby accept the mill.  
Yours truly,  
J. A. EDWARDS & SON.

Address, THE J. B. ALLFREE MFG. CO., 76 to 86 Shelby St., INDIANAPOLIS, IND.

Important Features in our 6 Roller Corn Mill.

- Entire Belt Drive.
- Independent Tightener on Both Belts.
- Absolutely Positive Differential.
- Simultaneous Setting by the Movement of one Lever.
- Automatic Vibratory Feed.
- Perfect Alignment of Fixed Rolls.
- Light Running.
- Absolutely Dust Tight.
- Practical Instantaneous Trimming.
- Rolls Removed with Great Facility.



THE KEYSTONE

6 ROLLER CORN MILL.

# NEW YORK BELTING & PACKING CO.

JOHN H. CHEEVER, Treasurer.

15 PARK ROW, NEW YORK.

Oldest and Largest Manufacturers in the U. S. A. of

Vulcanized Rubber Fabrics for Mechanical Purposes

MILLERS' HOSE A SPECIALTY.

Also a Good STEAM HOSE.

Rubber Mats, Rubber Matting and Stair Treads.

RUBBER BELTING, PACKING AND HOSE.

SALESROOMS:

ATLANTA, 15 Decatur St.  
BALTIMORE, 12 North Charles St.  
BOSTON, 52 Summer St.  
BUFFALO, 124-128 Washington St.  
CHARLESTON, 160 Meeting St.

CHICAGO, 151 Lake St.  
DENVER, 1602-1611 17th St.  
DETROIT, 16-24 Woodward Ave.  
GRAND RAPIDS, 4 Monroe St.

KANSAS CITY, 1313 West 12th St.  
MINNEAPOLIS, 28 South 2d St.  
NEW ORLEANS, 8-12 N. Peters St.  
PHILADELPHIA, 308 Chestnut St.  
ST. LOUIS, 616 Locust St.

European Branch, HAMBURG, GER., Pickhuben 5, (Freihafengebiet).

## ROPP'S + CALCULATOR.

[Revised Edition for 1890]



This book with its numerous tables, short cuts in figures, etc., is simply invaluable to Millers, Grain-dealers, Farmers and Business men generally. Prices, post-paid, as follows: No. 1. Bound in waterproof leatherette, 50 cents. No. 2. Fine artificial leather, with pocket, silicate slate and account book, 75 cents. No. 3. American Russia or Morocco, with pocket, slate and renewable account book, \$1.00. Address,

E. HARRISON CAWKER,

Publisher United States Miller, Milwaukee, Wis.

## CAWKER'S

# American Flour Mill & Grain Elevator Directory

FOR 1890-1891

- It contains:
1. A list of Flour Mills in each State, Territory and Province, with names of owners, P. O. and county; in thousands of instances giving their capacity in barrels per day, kind of power used, etc., also indicating such firms as are supposed to be worth \$10,000 and upwards. Total number of mills given, 17,145.
  2. A list of miscellaneous mills, such as Corn, Oatmeal, etc.
  3. A list of Millwrights.
  4. A list of Grain Elevator Owners and Grain Dealers.

5. A list of well-rated Flour Brokers, Merchants and BAKERS in all parts of the United States and Canada, which has been compiled with extraordinary care, capital and credit being considered in the compilation.
6. A list of Foreign flour and grain importers, secured by our own special correspondents and believed to be thoroughly reliable. In short, it is a complete KEY for reaching the Flour and Grain Trade, enabling ANY department of the trade to reach ANY other desired.

The price is invariably Ten Dollars per copy, on receipt of which it will be sent, post paid, to any part of the world. The complete work only is sold. We do not supply lists for single states. These Directories have been issued every two years since 1878, and have been declared indispensable by the prominent mill-furnishers, flour brokers, millers, etc., of this country and Europe. Address,

E. HARRISON CAWKER, No. 124 Grand Avenue, - MILWAUKEE, WIS.

## THE IMPROVED WALSH Double Turbine Water Wheel

Patent Cylinder Gate.  
Easy working.  
Positively no leakage.  
Shipped on 30 days' trial.



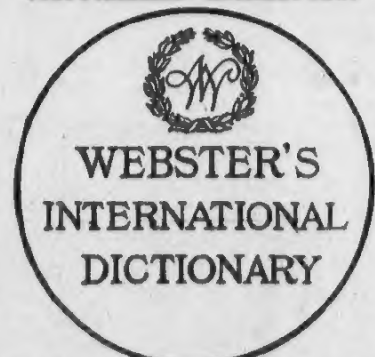
More power with less water than any other wheel in the world.

MANUFACTURED BY

B. H. & J. SANFORD  
SHEBOYGAN FALLS, WIS.

For special figures mention this paper.

## THE NEW WEBSTER JUST PUBLISHED—ENTIRELY NEW.



The Authentic "Unabridged," comprising the issues of 1864, '79 and '86, copyrighted property of the undersigned, is now Thoroughly Revised and Enlarged, and bears the name of Webster's International Dictionary.  
Editorial work upon this revision has been in progress for over 10 Years.  
Not less than One Hundred paid editorial laborers have been engaged upon it.  
Over \$300,000 expended in its preparation before the first copy was printed.  
Critical comparison with any other Dictionary is invited. GET THE BEST.  
G. & C. MERBLAN & CO., Publishers, Springfield, Mass., U. S. A.  
Sold by all Booksellers. Illustrated pamphlet free.

The INK used on this paper is from the factory of  
CHAS. ENEU JOHNSON & CO.,  
PHILADELPHIA, PA.

Western Branch House: 40 La Salle St., CHICAGO

## "Triumph" Corn Sheller.

CAPACITY  
2000 BUSHELS PER DAY.  
Shells wet or dry corn.  
CHEAPEST AND BEST SHELLER.



PAIGE MFG. CO.  
12 Fourth Street, PAINESVILLE, O.

## READ THE NEW YORK Daily Commercial Bulletin

Its reputation as the most reliable commercial paper is conceded by all.

Sample Copies Free.

Its markets Reports are the most complete and trustworthy of any published and cover all trades.

Save Your Money by subscribing to the "Daily Commercial Bulletin" and read its reports of the New York Markets.

PRICE:  
Daily, . . . . . \$12 00  
Tri-Weekly, . . . . . 6 75  
Semi-Weekly, . . . . . 5 00

ADDRESS:

New York Daily Bulletin Association,  
No. 32 Broadway, - NEW YORK CITY.

## Perforated Metals



For Milling and Grain Cleaning Machinery.

EXPORTING MILLER.

Send for copy of the new edition of the

Riverside Cable Code.

SINGLE COPY, \$3.00.

Address, UNITED STATES MILLER, Milwaukee, Wis.

## EVERYBODY'S PAINT BOOK.

A new work on INDOOR and OUT-DOOR painting which is designed to teach people how to DO THEIR OWN PAINTING and save the expense of a professional painter. The most practical and valuable work of the kind ever issued. Full directions are given for mixing paints for ALL PURPOSES. Tells all about PAINTS, PAINTING, VARNISHING, POLISHING, as well as how to RENOVATE FURNITURE, so that it will look as good as new. Tells all about HOUSE-CLEANING with paint and kalsomine. Full directions are given for making the beautiful SPATTER-WORK pictures in which the ladies are so much interested. Tells how to paint OUT-BUILDINGS, ROOFS, FARM WAGONS, FARM IMPLEMENTS and CARRIAGES as well as how to paint a PIANO or ORGAN; how to imitate GROUND GLASS or make paint for BLACKBOARDS; GRADING in oak and black walnut, painting in imitation of BRONZE, MAHOGANY and ROSE WOOD stain, GILDING, BRONZING and SILVERING. Beautifully printed, handsomely bound. WILL SAVE ITS COST in a short time. See by mail on receipt of price. Use No. 1.

ADDRESS,

United States Miller and Milling Engineer, MILWAUKEE, WIS.





Write us for particulars and references.

## The Jonathan Mills Universal Air Belt Purifier.

Saves Power and Space. Yields Increased. Percentage of Patent Increased. Low Grades Decreased. All Grades of Flour Improved.

Requires no cloth, no dust house, nor dust catchers.

All grades of middlings perfectly purified with absolutely no waste.

In use in many of the representative mills in the country and being rapidly adopted in all sections by all classes and sizes of mills.

THE JONATHAN MILLS MFG. CO., Columbus, O.:

Gents—On receipt of this, please send me another Jonathan Mills Air Belt Purifier, same as the ones heretofore sent. The more I use these machines, the better I like them. Our mill is so much cleaner than it ever was before, because we have no dust floating in the air, no waste whatever caused in the purifying process. Our middlings are absolutely perfect, and made so without waste and almost without power, the amount required to run the machines being so small. Respectfully yours,

HOMER BALDWIN.

THE JONATHAN MILLS MFG. CO., Columbus, O.:

Dear Sirs—The sieve purifiers are now all in the scrap pile, and your machines are in full swing, and the work is simply perfect. There is nothing left to wish for. It has made a wonderful difference in our flour.

HENRY C. YABGER.

YOUNGSTOWN, O., August 4, 1890.

CARLINVILLE, ILL., Sept. 11, 1890.

## THE JONATHAN MILLS MFG. CO.

+ COLUMBUS, OHIO, U. S. A. +

AFTER  
"THE TEST"

THE

# DUNLAP

WAS CHOSEN.

WITNESSETH:

THE BRADFORD MILL CO., Cincinnati Ohio:

Gentlemen—Mr. Clark has just given me his order for the Dunlap Bolt, and wants it shipped as soon as possible. Make up and ship with the Bolt a Conveyor as per enclosed sketch. \* \* \*

Respectfully,

FRANK E. NEAR.

THE BRADFORD MILL CO., Cincinnati, Ohio:

Gentlemen—Yours of yesterday received, and I wired you this morning "yes," as per your instructions. The sketch is all right. Make the Conveyor good and strong.

I told Mr. Near that he need not have cloth sent with the Dunlap Bolt, as I have the one here that was used in the test. I will use same numbers on the new machine.

Respectfully,

JAS. F. CLARK.

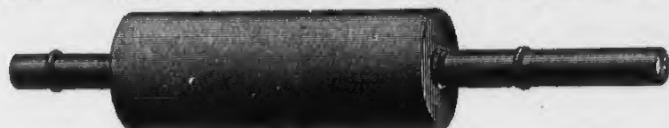
OFFICE OF THE SEIBERLING MILLING CO.

AKRON, OHIO, September 27, 1890.

## FARREL FOUNDRY & MACHINE COMPANY

+ ANSONIA, CONN. +

SOLE MANUFACTURERS OF THE CELEBRATED



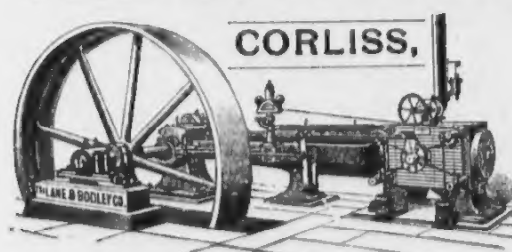
## ANSONIA ROLLS FOR USE IN ROLLER MILLS.

The general experience of American Millers unites in pronouncing these rolls the very best for Flouring Mill use.

These Rolls are now used in all Leading Flouring Mills

Chilled Rolls for Paper Mills a Specialty. Mention this paper when you write to us.

## THE LANE & BODLEY CO.



CORLISS,

MANUFACTURERS OF  
AUTOMATIC CUT-OFF

## ENGINES

From Heavy Patterns and of Unexcelled Workmanship.

Steel Boilers, Feed Water Heaters, Shafting, Pulleys and Gearing.

THE LANE & BODLEY CO., cor. John & Water Sts., CINCINNATI, O.

## The EUREKA TURBINE

The Best Part-Gate Wheel Ever Built.

Absolutely unequalled in efficiency, is shown by the accompanying table from the records of actual tests at the HOLYOKE, MASS., TESTING FLUME.

	Full Gate.	$\frac{3}{4}$ Water.	$\frac{1}{2}$ Water.	$\frac{1}{4}$ Water.
24" Wheel.....	.8436	.8416	.8308	.8008
24" Wheel.....	.8806	.8910	.8700	.8003
24" Wheel.....	.8078	.7598	.7875	.8798
34" Wheel.....	.8000	.8011	.7814	.6850

No other turbine ever approached the above figures at part-gate. We publish our part-gate figures. Others significantly omit them.

For catalogue and information address,

The Allentown Foundry & Machine Co.

ALLENTOWN, PA., U. S. A.



If You Need a New Water Wheel  
BUY THE BEST

## THE OLD RELIABLE "LEFFEL" TURBINE

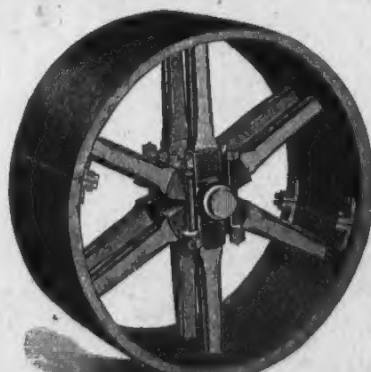
Write for our New Illustrated Catalogue of 1891.

THE LEFFEL WATER WHEEL & ENGINE CO. SPRINGFIELD, O., U.S.A.



BRANCH HOUSE, 1435 EAST MAIN ST., RICHMOND, VA.

## MENASHA HARDWOOD PULLEYS



We are sole makers of hardwood bent rim, oak spoke arm, iron hub pulleys; gripped to shaft with bolts and using patent paper bushings. They can be put on shaft without taking it down or outting key seats. No glue or nails used in their construction.

Also sole makers of only small split pulley 1 inch to 8 inches in diameter in the market. They are light, handsome and reliable. Best machine pulley made, and can be taken off or put on in five minutes. See above out of them. No glue or nails in them. No key seats to cut. Also makers of only Hickory Hangers in the market. They have an iron box and are adjustable, same as an Iron Hanger. Send for circulars and discounts.

MENASHA WOOD-SPLIT PULLEY WORKS,

MENASHA, WIS.



MILWAUKEE, WIS.,

A LARGE STOCK OF

Diamonds, Watches, Jewelry, Silverware,

SPECTACLES, ETC.,

At Reasonable Prices.

FINE REPAIRING A SPECIALTY.